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An Empirical Study of Aalto ArtSpace Co-Design Workshops

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ABSTRACT

Co-design has gain its popularity in engaging various stakeholders into the design process. Across the industry and academy, co-design workshops are widely used in the early phase of design. Due to the complex interaction nature of co-design workshops, it is challenging for the facilitators to get productive outcomes that are informative to the design project. Although numerous of co-design methods are offered, few attempts to elucidate how co-design practitioners shall facilitate co-design workshops productively.

In this thesis, the author sets out to define co-design workshops, facilitatory acts and attempts to identify productive facilitatory acts by analysing a serious of three co-design workshop. In addition, the author experiments with the *Framing Analysis of Design Articulation (FADA)* method (Ylirisku, 2013) in the process of analysing the workshop video records.

Keywords: co-design, workshop, video analysis, facilitation, productiveness, facilitatory acts

1 INTRODUCTION

Design researchers have seen potential in early involvement of various stakeholders to contribute to design projects – the design team collaboratively work with stakeholders with different backgrounds. Such approach is called co-design. The trend of co-design manifests a major shift in the understanding of creativity - creativity is no longer the privilege of designers exclusively, instead, it is a quality that everyone processes (Sanders, 2000).

On the other hand, designers and design researchers are situated in the changing landscape of design, where the boundaries of traditional design disciplines are blurred. Designers and design researchers are challenged with increasingly complicated problems and complex sets of stakeholders and decision makers.

With such changes at the background, co-design as a new perspective to design becomes increasingly significant. Why exactly is co-design gaining its popularity? According to Vaajakallio and Mattelmäki (2014), the reasons of doing co-design are the following:

- *Engaging users into giving feedback, comment or ideate solutions*
- *Gaining more knowledge and making sense of a particular group of people*
- *Gaining new perspectives from each other*
- *Developing creative thinking and human-centered attitude*
- *Improving collaboration and finding a common language*
- *Creating new business or other collaborative networks*

To summarize, co-design actively brings users (and often other co-design partners, too) into the process of design. Consequently, it deepens designers' understanding of the users they design for, and

encourages human-centered innovation.

An extensive amount of publications set focus on the methodological aspect of codesign workshops, in which researchers introduce co-design tools and methods. For example, *Storytelling Group* (Kankainen, Vaajakallio, Kantola, & Mattelmäki, 2012), *Design Games* (Vaajakallio, 2012; Vaajakallio & Mattelmäki, 2014), *Dialogue-labs* (Lucero, Vaajakallio, & Dalsgaard, 2012), *Probes* (Mattelmäki, 2005; Madden, Cadet-James, Atkinson, & Watkin Lui, 2014) and so on. The list of co-design methods is substantial.

Although numerous of co-design methods are offered, one may question how they actually work in the field. The research of co-design in the past years had a tendency to focus on introducing new, generalized methods rather than giving explanations to readers on when and how to use such methods. Even though the methods are proved to be working in their original context, how well do they fit in other settings? One reason appears to be the misconception of how methods are supposed to work in the field of design: instead of being standardized and universal, the design methods are by nature context-dependent. Thus it is very challenging to generalize the methods (Lee 2014). According to Lee (ibid.), unlike scientific methods, design methods cannot be easily reproducible. It is apparent that a method used in co-designing work environment with university teachers cannot be directly migrated in co-designing learning tools with kids in kindergarten. Lee (ibid.) further criticized the tendency of overlooking how methods are created and how they work in research. It is an awakening note for co-designers when comes to applying and creating co-design methods. However,

she focused on the roles and benefit of design methods rather than how designers can benefit from such understanding when practicing co-design in the field.

1.1 MOTIVATION, OBJECTIVES AND RESEARCH QUESTION

This thesis started from a project I participated at school in late 2013 called ArtSpace. It is a project derived from the planned migration of Aalto ARTS's campus. I was part of a student team who run the project. We facilitated three co-design workshops that aims to bridge the gap between design committee of a new architecture and its perspective users. During the ArtSpace project, the student team tried to adopt a few popular co-designed methods, such as Design Probes, Design Games and Make Tools. As a result, we provided detailed report of design students activities in Aalto ARTS. It turned out to be insightful and valuable to the migration committee because of the user needs attained, and user profiles created through co-design workshops.

The ArtSpace project is a good learning opportunity for me as a designer and researcher because 1) it allows me to put the co-design methods learnt from school into practice 2) the project allows for the possibility to co-design with different groups over the same topic, but with different tools and methods 3) I was guided by very experienced workshop facilitator, 4) the participants allowed me to film the workshop for research purpose, which laid the ground for using video analysis method to scrutinize the workshops. Recognizing these opportunities, I was motivated in studying the facilita-

tion of the ArtSpace workshops.

However, the progression of the project was not trouble-free. Albeit all the efforts spent in planning and facilitating, I was frustrated when facilitating some of these workshops. As an inexperienced facilitator, I was helpless when the co-design session slide into an unexpected lane, lost control and turned out to have little contributions the project. I kept asking myself what could have been done differently to improve the situation. These frustrations drive me to continue to research on the topic after the project. I hope by sharing my experiences in these workshops, as well as my findings, fellow co-designers could avoid the pitfalls I encountered.

I was able to analyze of the ArtSpace workshops thanks to the documents and video preserved during the project. My aim is not to generalize how facilitation should be conducted through this study, but to bring forward the challenges co-designers may face in facilitating co-design workshops.

The objective of the analysis is two-fold: 1) to uncover productive facilitatory acts in a series of three workshops, and 2) to experiment with the Framing Analysis of Design Articulation (FADA) method (Ylirisku, 2013) in the analysis of co-design workshop.

My research question is: How do different kinds of facilitatory acts influence the outcome of co-design workshops? Grounded on the ArtSpace workshops, I attempt to answer the question by bringing forward the errors and mistakes designers make during workshop facilitation in this thesis.

1.2 METHOD

To answer the research question, I focused on the three workshops the student team facilitated during the ArtSpace project. As a key member of the team, I was not only involved in facilitating the workshops, but also actively participating the planning and preparation of the workshops. The research is conducted through practice, where the team imagine and try out new ideas, instead of following theoretical traditions.

Before facilitating the ArtSpace co-design workshops, the project team participated in workshops facilitated by the migration committee. This experience helped us 1) to understand the objectives of the project, 2) to get familiarized with the group of participants, and 3) to understand the scope of issues and expectations. The student team also made observation of the facilitation of the focus groups, and interviewed the facilitators. This approach allowed us to make a workshop plan with preliminary knowledge and sufficient understanding of both the context and the facilitation.

As the project proceeded, the student group reflected upon the experience of the workshops that took place, and actively adjusted the strategy of facilitation according to evaluation of the previous workshops. For example, the student group encountered a major frustration after the second workshop, where the dominative participants took over the facilitator's role, and drew the workshop to an unintended direction. After that, the team analyzed the cause of such mishap, and made adjustments in the following workshops accordingly.

To thoroughly understand the dynamics between facilitator's act and participants' response, I took video records of the workshops as my research data. Video analysis is by nature qualitative. Even though the data is limited to three co-design workshops, its abundant detail is still enough for me to draw conclusions from. The analytical process was guided by Framing Analysis of Design Articulation (FADA) of Ylirisku (2013). The original method is an analytical process that consists of four levels (rounds), including "transcription", "identifying concepts", "identifying frames", and "uncover framing strategies" (Ylirisku, 2013, p. 91). This provides me a systematic approach to the data gathered during the ArtSpace project.

While the original FADA method has its clear objective in understanding "project-specific conceptual learning in conceptual designing"(Ylirisku, 2013, p. 88), I applied the FADA method to study the correlation between the facilitatory acts and the productiveness of co-design workshops. Thus instead of "identifying concepts", "identifying frames", and "uncover framing strategies" (ibid.), my goal is to identify the facilitatory acts and the participants' response to such acts.v

1.3 STRUCTURE OF THE THESIS

This thesis consists of seven chapters. While Chapter 1 introduces the research topic and the motivation for the study, the next chapter situates the topic in the relevant literature on co-design facilitation and identifies a weakness in the current approach. In Chapter 3, the ArtSpace project background and research setup will

be explained, including how the FADA was applied in analysing the workshops. Chapter 4 then introduces the empirical data (the workshop output) collected for the studying facilitatory acts. In Chapter 5, I present some selected highlights of the findings. The selected focal events of the workshops are presented in the form of transcripts, so that the reader can follow my arguments. In Chapter 6, I will summarize the findings from the analysis. In addition, I will articulate the contribution of these findings to academia and practice. The final chapter presents the conclusion and proposes suggestions for future research.

2 CO-DESIGN WORKSHOP AND FACILITATORY ACTS

2.1 CO-DESIGN AS A NEW APPROACH TO DESIGN

For the past six decades, designers have been moving closer to the future users of their designs. In those industries where technology is mature, additional features are no longer of value; companies are gravitating towards designing what people need and aspire. Design research evolved from a user-centred design approach towards co-designing approach in which the traditional roles of designer and user is redefined. Co-design derives from Participatory Design, an approach that assumes the users as the experts of their own domain and should be part of the design process for better outcome. Collaborative design (co-design), as its literal meaning suggests, is an approach to design that relies on the collaboration of multiple stakeholders with relevant skills and knowledge to a project, for example, designers, users, researchers, etc. The interplay between these different stakeholders takes full advantage of different perspectives and resources. Co-design goes beyond interviewing the users *what they may want*, or only have a group of designers make decisions on design. Instead, co-design involves the people as partners, whose input will shape and direct the design process.

Another factor that popularized the co-design approach is the growingly *wicked* problems that are facing designers. “Despite increasingly sophisticated methods aimed at handling complexity, human, social, and ecological problems proved to be ‘wicked’ and unsolvable by rationalistic methods (Rittel & Webber, 1973).” This precisely reflects the development process in modern design, which often starts with a large, complex front end, as referred to as the *fuzzy front end*. The *fuzzy front end* involves lots of explorations and

open-ended questions. Consequently, designers are presented with bigger, more difficult to define, increasingly challenging questions, known as the "wicked problems":

> Wicked problems are difficult or impossible to solve because of incomplete, contradictory, and changing requirements that are often difficult to recognize. Moreover, because of complex interdependencies, the effort to solve one aspect of a wicked problem may reveal or create other problems. (Rittel & Webber, 1973)

At the same time, the business and design objectives started to shift. The traditional objective of designing – "making stuff", is reshaped into "making stuff for people in the context of their lives". Co-design can be seen in all stages along the design process. Design is not just about individual creativity, due to the fact that the problem scope is beyond individual's capability. People, instead of merely to be served through the design, are now the experts to the complex situation (Sanders & Stappers, 2012).

Designers need to integrate the strength of different shareholders to promote shared knowledge and practices in order to face the challenge of complex problems in today's society. Organizing the participation is as important as designing the outcome (Brandt, 2006). Getting insights from different shareholders through workshops is one of the objectives in co-design (Svanaes, 2004).

Traditional user research methods (for example, interview) assume the users are explicit sources of knowledge and information, thus interviewing users about what they want becomes a general mindset of traditional user research. But users are not always able

to explicitly express their knowledge and experiences. Sleesvijk Visser (2009) explained that even simple everyday experience (like drinking coffee) involves countless detailed information related to the moment, context and mental state. As Sanders and Stappers (2012) point out, most of our experience and knowledge is tacit, or deeply embedded in the everyday activities. “Our habits, rituals, dreams and attitudes are not (necessarily) things that we can gain immediate access to in order to describe them to design researchers, we may not even be aware of them ourselves (Hagen & Rowland, 2011).” Through the co-design process, the designers will be able to understand the users better by enabling the users express themselves through co-design tools.

2.2 CO-DESIGN WORKSHOP AND FACILITATORY ACTS

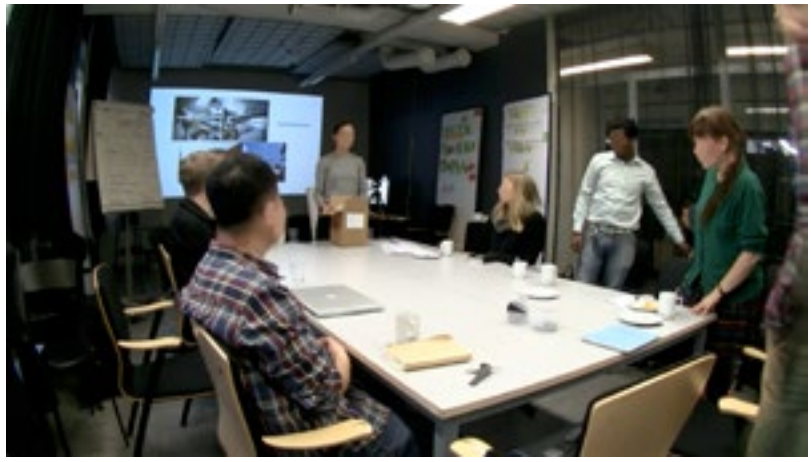


Figure 2-1 Setup of a co-design workshop – the stage (screen, table, flip-charts), the facilitator, the participants and the co-design tools (in the box at the end of the table).

Workshop has different meanings in different fields. To some, the word 'workshop' refers to any group session that involves creativity as a topic, for example, woodwork workshop, watercolor workshop. In co-design, workshop is a form of "co-design gathering", a concept that is first introduced by Goffman:

A co-design gathering indicates a situation . . . to carry out some design activities. It . . . can be described in terms of social occasion that is typically programmed in advance, possesses an agenda, has a pre-established unfolding of phases guided by someone, and invites only specific people (Goffman 1963, pp 18–19). (Vaajakallio, 2012, p. 13)

This definition highlights the facilitative and goal-driven nature of co-design workshops. A workshop must be intentionally facilitated. Further, a workshop must have a goal, and a plan in order to proceed to that goal. All activities in the workshop, with the help of the facilitator, must be in-alignment to goal.

In this thesis I define co-design workshop as a social event where stakeholders temporarily physically gather together to collaboratively perform design activities on a pre-defined topic, with pre-fabricated agenda and pre-determined goals. Co-design workshop is different from 'focus groups' often used in market research and is different from user interview used in product development. The fundamental difference is that co-design workshop emphasizes on *designing together*, which translates into involving participants to make concepts and decisions together.

A co-design workshop should retain the following attributions:

1. Variety of stakeholder. To gain access to the widest coverage of domain-specific knowledge and opinions of different groups;

2. Temporariness. A workshop is limited in time. Unlike most real projects that are resourced by the unit of weeks, co-design workshop is usually timed by hours. For example, in the ArtSpace project, the 3 workshops are scheduled to last for 2 hours each. This is because the participants of the workshops do not work on the project. Sparing more than 2 hours from their work time is impractical.

3. Physical gathering. In the world today, technology is enabling people to easily communicate through a large geographical span. However most co-design activities are based on low-tech, hands-on tools, which will benefit from face-to-face communication.

4. Agenda and goal(s). Despite of the chosen topic, a workshop need to be clear in agenda and goal(s) to proceed effectively. It is the facilitator's job to come up with a through agenda and communicate the goal(s) to the participants.

In most co-design workshops, the topic is defined by the project. For example, a workshop topic can be 'designing an interior space for arts students', or 'designing a cyclist-friendly train station', etc. However, due to the limited time of a workshop, a larger topic may need to be broken down into several small ones.

Co-design workshops largely rely on facilitator's planning before the workshop and guidance during the workshop. Such planning

and guidance is the key to successful co-design workshops. In this thesis, the inputs of the facilitator are called “facilitatory acts”, which is a word emerged during my interview of Dr. Salu Ylirisku over the topic *conceptual learning*:

> *…What is ‘facilitatory act’? … ‘Facilitatory acts’ is you introduce the goal, the material and the workspace, and then the participants, hopefully has a consequence of the facilitation, they start to work accordingly. (See Appendix I)*

I define the term *facilitatory acts* in this thesis as actions the facilitator performs before and during a co-design workshop that aim to support the co-creation and guide the co-creation towards the goal. For example, the following acts fits the definition of facilitatory acts: 1) verbally briefing the project background, 2) instructing the participants to use certain tools, 3) writing down key words occurred during discussion on flipchart, etc. Even though I ground the facilitatory acts on the facilitator’s moves, facilitatory acts can unintentionally come from the participants as well. This aspect of facilitatory acts is not planned nor controlled by the facilitators, thus falls out of the scope of this thesis.

One important aspect of facilitatory acts is that it starts before the workshop takes place. For example, facilitators define the agenda and goal(s) of a workshop, based on requirements or objectives of a project.

Since co-design workshops rely on facilitatory acts to get constructive results from the participants, I think it is safe to assume the correlation between facilitatory acts and outcome of co-design workshops. In later part of this thesis, I will explore this correlation

by analysing the three ArtSpace workshops I participated.

2.3 THE PRODUCTIVENESS OF CO-DESIGN WORKSHOPS

"What are the qualities of a good co-design workshop?" This is a question that comes into my mind when I started to plan the ArtSpace co-design workshops. To evaluate a co-design workshop, I need to find the measurement. Ultimately, it is about whether the design team can get enough valuable information out of the co-designing. I soon start to use *productiveness* in attempt to describe how well a co-design workshop contributes to the design process.

Productivity is often used in economy to describe "the ratio of a volume measure of output to a volume measure of input use" (OECD, 2001). Higher productivity reflects better efficiency in producing outputs (Camus, 2007). However, there is a difference between the economical term *productivity* and the *productiveness* I use in this thesis. Productivity as an economical term may very well reflect the quantitative aspect of user input collected the workshops, but it is neglecting the qualitative aspect of the output. In co-design workshops, the output quality is significant.

What can be observed in co-design workshops are the goal(s) and outcomes, in particular, i.e. how well the outcomes are aligned to the goals. This notion was confirmed in the interview of Dr. Salu Ylirisku:

"... facilitatory act ... is basically a frame-setting activity. It enables people to start working towards a new goal ... essentially to

make you work in a goal-aligned manner." (See Appendix I)

So a productive co-design workshop produces adequate outcomes that are aligned to the goal(s) of the workshop. However, this brings up other questions: can facilitator expect the outcome of a co-design workshop? Do co-design workshops always have goals before they take place?

Sanders and Stappers (2012) argue that because of some projects are very big (especially in the social sector), the goals of such projects tends to be ambiguous when the projects kick off. Defining the goal(s) is part of the challenge. This obviously sets a dilemma for co-design workshop facilitators. Despite of the ambiguity of project goals, the facilitators are always expected to introduce the workshop goal(s) the participants. How can anyone articulate the goal(s) of a workshop that play as a part of the larger whole, when the whole picture is still unclear? Even if the goal is clearly defined initially, it may get redefined as the project proceeds. This is perhaps why the workshops in the initial phases are called exploratory workshops (Sanders & Stappers, 2012).

Mattelmäki, Brandt and Vaajakallio (2011a) elaborates that the outcome of such exploratory workshops can be open-ended, i.e. not clearly defined up front, as long as it affords collaborative exploration and shared knowledge creation. However, even though outcome is usually to some extent unexpected in co-design workshops, workshops most certainly have pre-determined goal(s). For example, co-design workshop goals can be 'getting user insights and feedbacks', 'co-creating public space' or 'share the experience of visiting a doctor'. It is a key facilitatory act to explain the goal(s)

clearly, so that the workshop participants know what is expected from them, and align their actions with the goal(s).

To reiterate, the workshop must have a clear goal even when the larger whole project doesn't. It is the facilitator's responsibility to provide participants such a goal. For example, the goals of the 1st workshop of ArtSpace project are 1) understand the needs of space from design department students; 2) test the co-creation tools for later projects.

Set aside whether the outcome(s) of a workshop aligns with its goal(s) or not, a good amount of materialized ideas usually is an indication of a fruitful workshop. Materialized ideas are visible or tangible artifacts created by the participants during the co-design process. They are often fabricated out of materials supplied by the facilitator. For example, sketches drawn, collages created, models built by the participants are materialized ideas. Materialized ideas reflect group learning, and facilitates co-creation by allowing participants to better understand the topic and build upon each other's ideas so that co-creation is achieved.

On the other hand, materialized ideas help the facilitators and other project members to keep track of the progress (See Appendix I, 40:26). It allows the design team to better refer to the outcome of a certain workshop, which is especially important in long term projects. The design team should ideally participate the co-design workshops (Mattelmäki, 2006), because design is essentially a integrative and reflective process (Schön, 1992).

2.4 DESIGNERS AS FACILITATORS

As established earlier this chapter, co-design is important to contemporary design practice. Even though co-design comes in various forms, this thesis focuses one major form of it – co-design workshops. The participants many not be familiar with each other, nor be able to envision the outcome of the workshop. Depending on the projects, or the stages of projects, participants of codesign workshop benefit design in different ways. For example, in early stage of a project, the participants are usually diversified, so that their input can help shape the scope, and inspire/inform the designers. Comparing to the variety of projects, stages and participants, the facilitator's role is easier to define.

In co-design workshops, participants from different backgrounds contribute in a temporarily setup towards a commonly recognized goal. Facilitator as a role is needed to support design collaboration, and lead the process in co-design workshops. In many cases, it is the designers who take the role of facilitators, because of their understanding of the design challenges and their possession of design skills, for example visualization, creative thinking, making design proposals and scenarios. In collaborative design, designers, instead of being experts in design, become facilitators of participants' creative, collaborative activities. It is not difficult to imagine that facilitating the collaboration between people who have various competences and point of interests but do not have design skills is a challenging job (Brandt, 2006). As Berry (1993, p. 23) puts it,

> *"the essence of facilitation is a willingness to take responsibility for the whole, seeking to enable each individual to contrib-*

ute as appropriate."

It is the facilitator's responsibility not only to lead the process of co-design workshop, but also to guide the process so that the outcome contributes to the project. In order to achieve this, Berry(1993, p. 24) argues that the facilitator should possess certain skills and competences to fit the role:

1. *Understanding context*
    a) *Understanding business environment*
    b) *Understanding group culture*
2. *Technical competence*
    a) *Understanding the learning process*
    b) *Understanding group dynamics*
    c) *Planning and preparation*
    d) *Managing the physical environment*
    e) *Managing time*
    f) *Managing visual aids*
3. *Rational skills*
    a) *Objectivity*
    b) *Judgment*
4. *Interpersonal skills*
    a) *Active listening*
    b) *Clarifying*
    c) *Questioning*
    d) *Summarizing*
    e) *Presentation*
    f) *Observing*

g) *Feedback*

5. *Task process skills*
   a) *Results orientation*
   b) *Establishing expectations*
   c) *Maintaining focus*
   d) *Pacing*
   e) *Going with the flow*
   f) *Human process skills*
   g) *Establishing trust*
   h) *Treating people as equals*
   i) *Recognizing and respecting differences*
   j) *Balancing individual and group needs*
   k) *Addressing people's fears*
   l) *Confronting difficult issues*
   m) *Resolving conflict*

6. *Personal characteristics*
   a) *Self-awareness*
   b) *Modesty*
   c) *Emotional stability*
   d) *Humanity*
   e) *Integrity*
   f) *Quality of humor*

As good as these 'competences' all sounds, one may find them of little help to the actual practice of co-design workshop facilitation. A key weakness is its ambiguity. Such 'competences' can be easily related to competences of a promising presidential candidate, a rising entrepreneur, or a medal-winning police officer. On the other hand, Berry's list relies too much on personal skills and characteris-

tics, which one can argue as good add-ons, but not as the essentials to facilitating workshops.

2.5 THE METHODS FOR CO-DESIGN WORKSHOPS

Fortunately, there are other ways to help with facilitation besides trying to improve one's charisma. In co-design workshops, facilitators may employ a large set of methods and tools to help with their facilitation, such as, emotional toolkit, doll's house toolkit, storyline toolkit, cognitive toolkit, group cognitive toolkit, to provoke discussion, enable sense-making, and guide attention (Sanders & Stappers, 2012). There have been plenty of literature covering the methods and tools utilized in codesign practice (Brandt, 2006; Mattelmäki, Brandt, & Vaajakallio, 2011b; Sanders & Stappers, 2012; Svanaes, 2004).

Not limited in co-design, it is evident that there has been a trend to rationalize design practices into *methods*. At Delft, Sleeswijk Visser (2009) listed 44 user-centered methods in her doctoral thesis, and the world-leading design agency IDEO introduced a pack of cards having 52 methods (Koskinen, Zimmerman, Binder, Redström, & Wensveen, 2011). However, many expressed doubts in this trend. Lee (2012) argues the attempt to standardize design practices as 'methods' is fallacious because the effectiveness of methods depends heavily on the context they are originally situated. Koskinen et al. (2011) do not agree rationalistic methods can succeed to get much following in design. In their book about constructive design research, Koskinen et al. (2011, p. 15) quoted Swedish designer Henrik Gedenryd:

> *...not only don't designers work as design methodology says they should, it is also a well established fact that to do design in the prescribed manner just doesn't work.*

In contrast to the abundance of co-design methods, it seems that we know little about what actually works in co-design workshops. I do agree that most methods perform well in their original context, when targeting their indented group of participants. There is a limited amount of empirical studies that would spell out what actually takes place in productive codesign facilitation. Let us consider some concrete examples:

Sanders et al.(Sanders, 2000; 2012, 2014) propose the use of Make Tools to facilitate the user in accomplishing pre-determined activities. The core argument of the Make Tools is that "*everybody is creative*". The activities Make Tools supports includes, for example, recalling memories, making interpretations and connections, seeing and explaining feelings, or imagining future experiences(Sanders & Stappers, 2012). In the book Convivial Toolbox, they collected an extensive amount of co-design cases. But where is the empirical advice about how facilitation works in action? What should be done differently if the plan does not work? What are the signs that the facilitator should attend to when facilitating group learning?

Lee (2012) has suggested that design methods are not actually portable from one context to another, instead they require a lot of context-specific tailoring. How should one decide whether a method is suitable for a specific project? Should the facilitators come up with new methods instead? It is apparent that Lee did not explicate productive facilitation beyond broad ideas.

Or let us consider Vaajakallio's works. In her practice of design games, the game rules and materials that are designed beforehand with the interest of the design team, and the goal of the project in mind. But as with all pre-determined tools, how should facilitators adjust their strategy when the participants show no interests of getting involved the *hands on* session?

Eriksen et al. (2014) emphasizes the power relation between co-design workshop participants and facilitator - the facilitator (participatory design researcher) often dominates the workshop because they define and bring the co-design tools. Nonetheless, the paper overlooks the situation where facilitators being dominated by powerful participants. What should facilitators do to keep their dominative position, besides pre-defining the co-design method being used and coming up with a workshop schedule?

As established earlier, most 'methods' in co-design are context specific. There are examples that suggest what works, but few explains in what situation or with what people certain method will work. Critically speaking, due to the focus in rationalizing design practice into methodology, while overlooking that design is a context-dependant practice, there is few practical advices for co-design facilitators to improve their facilitating skills.

2.6 MISSING START POINT FOR PRACTITIONERS

Speaking of practical advice, Svanaes and Seland (2004) presented results of their attempt to find a workshop structure through trial-and-error: 1) it is important that facilitators understand the purpose of the workshop; 2) running workshop without real users

risks of iterating assumptions; 3) sharing the same understanding of the workshop purpose between facilitator and participants is essential; 4) the facilitator should act when some participants' action disrupts the creative process. These finding may not be universally rewarding for all workshop planning - they are not aiming to deliver a "method", but mere practical advices, which are greatly beneficial to inexperienced facilitators. Unfortunately, advices like these are scarce.

In this thesis, I expect to provide advices that can help co-designers to not only start their workshops, but also avoid unproductive facilitation. Based on the presented study it is clear that there are distinguishable aspects of facilitation that make a difference between productive co-design work and unproductive casual talk. Badly facilitated workshops will result in empty talks or pointless arguments. Consequently, it creates difficulty for the design team to extract relevant information, which is a waste of design resources and time.

3 ARTSPACE PROJECT AND FADA METHOD

3.1 THE ARTSPACE PROJECT

This thesis started from an architectural design proposal named "Väre" (Finnish, means "ripple"), which is the chosen concept design for the new *School of Arts, Design and Architecture* (ARTS), *Aalto University*. Designed by *Verstas Architects*, it involves constructing a new building in order to accommodate the teaching activities of ARTS inside the main campus of *Aalto University* in *Otaniemi*. *Aalto University* formed a migration committee to manage construction of the new building, and specify the requirements from the teaching and managing perspectives. The committee, in association with *Verstas* and interior design studio *Workspace*, initiated a series of studies and discussions regarding the migration. Teachers, staff and students were involved in these studies and discussions. The goal was to collect ideas, and validate the architectural concept for the indoor space of the new building.

In this context, the Design Department of *Aalto ARTS* started a student project named "ArtSpace" to reach the prospective users of the new building in department of design, namely design students, researchers and teachers. The project lasted 3 months, 5 students (including myself) were involved. The aim of *ArtSpace* is to study the needs of prospective users of the new building to influence the interior design. Co-design workshops were used in involving the prospective users.

Figure 3-1 Timeline of the ArtSpace project

The ArtSpace project was a good opportunity for me to study the facilitation of codesign workshops. I participated in the project as a student and a researcher. As a student, along with the other students, we planned, prepared and organized 3 workshops. The three workshops targeted design students, teachers and researchers, and the committee in sequence.

The workshops did not always go as planned – two of which achieved their anticipated goal - got insightful, relevant information; yet there was one workshop failed to provide desired data due to many reasons. The workshops were evolving upon each other during the project, and the students were learning and experimenting. Failures became valuable experiences for later planning.

As a researcher, the ups and downs in the ArtSpace project suit well for my research purpose. Throughout the project, I documented the planning, preparation and proceeding of the 3 workshops with video cameras. I also preserved the background research materials, interview summaries, meeting records and co-created

materials from the codesign workshops. These become my solid basis on analysing the workshops, so that I can find out the answer to the research question "*How facilitatory acts influence the outcome of co-design workshops?*".

3.2 FADA METHOD

The research method of this thesis is research through design. It focuses on drawing conclusion from qualitative data analysis. I have planned and participated a series of workshops in the 'ArtSpace' project. The workshops are documented for the purpose of analysis. The analytical process was guided by Ylirisku's FADA (Framing analysis of design articulation) method. Based on "what can be perceived in interaction", FADA method assumes that lived practice preserved in video records allows for the interpretation of signs embodied in its visual view while retaining their original visual character well enough for the analysis. The combination of video and audio records allows for detailed scrutiny on the interactions based on solid observations (Ylirisku, 2013, p. 88).

The process of FADA method begins with identifying the events that will be analysed in detail. This can be achieved by the significant changes in the description of the things-to-be-designed by the project team. The next step is to analyse the video recordings. The analysis iterates four rounds, with goals shown in the table below (Table 3-1). Each round build on top of finding(s) from the previous round(s).

Analysis	Focus
1st round	Expressions
2nd round	Concepts
3rd round	Frames
4th round	Framing

Table 3-1 Timeline of the ArtSpace project

Data integrity is important when utilizing FADA method. All of these rounds should be based on "good data", which is defined in Ylirisku's work(Ylirisku, 2013, pp. 90–91) as the followings:

1. *The focal event(s) must be covered on video in a way that allows for the close scrutiny of the use of semiotic resources. The semiotic fields that the participants of the studied situations employ need to be covered by the video data.*
2. *The initial project description needs to be known, including the agenda and aims of the project.*
3. *The events that lead into the focal event(s) need to be covered in such detail that it enables the tracing of the evolution of project- specific semiotic resources.*
4. *The results of the project need to be known.*

These specifications guarantee the integrity of the research material. In order to acquire the "good data", I used two wide-angle video cameras located at the opposite corners of the workshop room to capture the progression of all three workshops. Both the video and audio are clear enough to allow for the "close scrutiny"; the project team have documented in detail the project briefing; the

"focal event(s)" are documented on the video records clearly; we have a good understanding of the outcome of the projects, and the co-created materials are preserved. In other words, the video data captured during the ArtSpace codesign workshops fulfill all the prerequisites of the video analysis process.

In Ylirisku's original work, FADA method was used in analysing the construction of conceptual ideas. Thus lots of the analysis was focused on the meaning of words, terms, bodily movements and supplementary writings on paper. While in this thesis I used the method to analyse the facilitation. The formation of conceptual ideas is not going to be looked into. Instead, how the facilitator gave instructions, and how the other participants understood and followed is investigated in detail. In other word, I utilize the systematic approach of video analysis of FADA method to investigate the correlation between the facilitatory acts and the productiveness of co-design workshops.

As Ylirisku (2013) puts it, the leading role of the workshop, whose actions were analysed with most attention, was named Master. According to the analysis, masters are teachers who take the central role in conceptual design. Even though master and facilitator both lead the workshop process, master is not the same as facilitator. In my research, however, the participants' actions were paid equal attention as the facilitators'. This is because the essence of co-design is the interaction and collaboration between participants and designers. Facilitator does not dominate the conceptual design. Instead, facilitator guides the participants to cooperatively build the design.

4 RESEARCH SETUP

4.1 COLLECTING DATA FROM CO-DESIGN WORKSHOPS

Throughout the ArtSpace project, I was able to participate the planning, the proceeding and the summarizing of the workshops. This allows me to have a full understanding of the project, so that I could analyze the facilitation with the whole picture in mind. It was clear at the very beginning that I would take this project as my research data, so I tried to document the entire project for later reference and analysis. Besides, because of my role as researcher during the project, I did not actively facilitate all the workshops. Instead, being an observer gives me more freedom to study the facilitatory acts in action.

A co-design workshop can be reflected with data in multiple forms – post-it notes, drawings, co-creation from Make Tools, etc. The outcome of different workshops can vary a lot due to various ways of generating and collecting such information. In order to study the facilitation of co-design workshops, I need to separate the facilitation from the tools being used, and the consequent outcomes of the tools. That is why I use video records of the ArtSpace co-design workshops to study facilitatory acts.

To capture the "*good data*" specified in the FADA method, I set-up two video cameras with wide-angle lens to capture full proceeding of the co-design workshops (see Figure 4-1). One was positioned in the front corner of the meeting room, while the other was positioned diagonally in the other corner of the same room. This setup produces wide coverage, and creates redundancy. For instance, the front camera clearly captures the voice of the facilitator, as she

mostly stands / sits in front of the projector screen; while the rear camera captures her gesture and expression, as well as the participant's reaction (see Figure 4-2). In case of accidental equipment failure (one of the video camera malfunctioning), this setup will still provide me sufficient resource for the study.

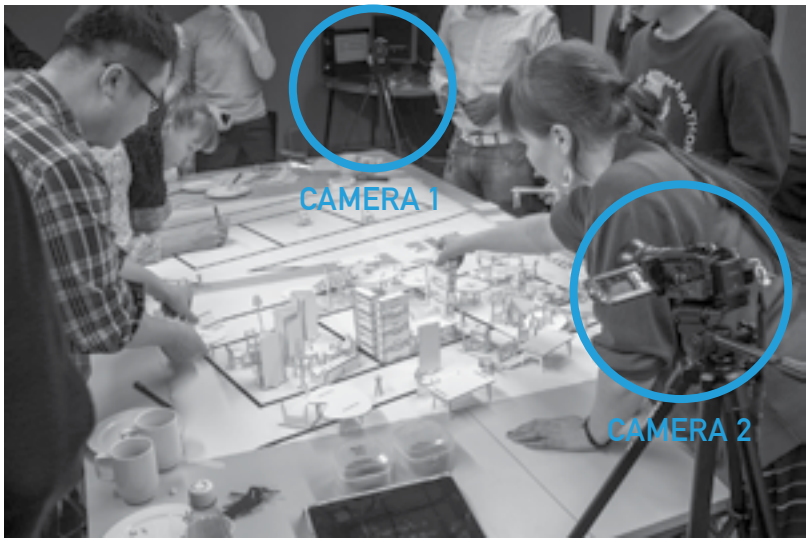


Figure 4-1 Video camera setup

Figure 4-2 View-angle comparison between front camera (right) and back camera (left)

In addition to the video, my research data also includes documentary photos, meeting records of the projects, interview summaries, workshop summaries, co-created materials and project report. As I have been participating in the workshops, my personal memories and experiences helps connecting the various kind of data while reconstructing the situation.

The setup of each workshop is elaborated in detail in the next chapter.

4.2 PROCESSING THE DATA

With these data in hand and the research question in mind, I start to interpret them following the FADA method. As mentioned in the method chapter, the method in use is inspired by FADA, yet it does not strictly follow the original method due to the difference in purpose. On the other hand, even though the data I gathered for this study is qualitative, due to the nature of video data, there are overwhelming amount of details. I need to limit the scope of the analysis before devoting time to it. I processed the video data with the following steps:

The *first step* is identification. I watched the workshop videos thoroughly and wrote down the starting and ending time of the facilitatory acts. Correspondingly, the participant's reaction to the facilitatory acts are marked. This way I identify the important segments of the workshop, where I think facilitatory acts can make an influence to the outcome of the workshop.

The *second step* is transcribing. Comparing to the raw video data,

transcripts are easier to read and compare. Meanwhile, transforming the workshop data from video format to text format yields easy access for the audience of academic paper. In the transcripts, I intend to reflect not only the verbal expression of the facilitators and participants, but also their body language and facial expressions. Additionally, I aim to describe the context before and after the selected segments to provide the reader some contextual information.

For the *third step*, I highlight the critical moments of the workshops, namely how the facilitator framed the goals, what kind of resources she provided, and how the participants responded to her. This narrows down the scope down even more.

Only after these *three steps* I zoomed into the detailed interaction recorded on video. During the ArtSpace project, the workshops were evolving as our experience gains, I am able to draw conclusions by making comparison between different workshops. Viewing from the timeline of the project, I began analysing the video data after the project ended, at which point a holistic understanding was formed in my mind to allow me to go though the aforementioned steps with a bird view.

4.3 WORKSHOP PREPARATION

In a border sense, workshop facilitation starts long before the workshop takes place. A workshop as an organized events should be designed so that the outcome is insightful to the project. Due to the collaborative nature of co-design workshops, there are a multitude of uncertainties. A major source of all uncertainties is the participants – their communication skill and styles, their commitment

and interest in the project, their background and so on. Facilitators are not able to control these uncertainties, nor directly control the outcome of co-design workshops. But facilitators can prepare for the uncertainties, as well as influence the participants, so that the outcome of a workshop aligns to its goal.

There are several aspects of workshop preparation. For example, planning, toolbox creation, choosing and inviting participants, and testing of workshop.

1 PLANNING

In the planning phase, the goal and scope of the workshop, along with many other topics about facilitation are discussed by the team of facilitators. For example, in ArtSpace project, the following questions are asked when planning for the first co-design workshop:

- What is the goal and scope of the workshop?
- Who shall we invite to join the workshop? How many participants are we going to invite?
- Shall we 'probe' the participants before the workshop?
- How long is the workshop going to last? When is the best time for the participants to join?
- Where shall the workshop be held? Do we need to book a space?
- What kind of co-design tools should we use to facilitate workshop? How much time can we spare for making the tools?
- Should there be a break time? Shall we provide the participants with coffee and desserts?

These questions are indispensable for planning co-design work-

shops. The answer to these questions leads the content and form of the workshops.

2 TOOLBOX CREATION

Most co-design tools are designed for their original purposes, so they are not directly applicable to a wide range of project types. Ideally, the toolbox should be modified to fit the needs of a specific project. In the ArtSpace project, the student team created more than one set of co-creation tools for each workshop. The multiple tool sets are created in case some tool sets fail their intended purpose. For example, for the first workshop, there is one interior blueprint to be used along with post-its, so that the participants can come up ideas on the interior space of the entire building. There is also a set of three-dimensional furniture models, used in conjuncture with larger scale blue prints, so that the participants can co-create interior arrangement at the room/studio level (see Figure 4-3).

Figure 4-3 Co-design toolbox designed for Workshop 1

Creating co-design toolbox also covers a broad arrangement of materials that are essential to co-design workshops. To name a few, flipchart, post-its, markers, colour stickers (for voting ideas), projector and even a clean wall to stick post-its on. The flipchart can be used to write down keywords as the workshop proceeds, so everyone in the room can follow the line of thought, avoiding deviating discussion.

3 INVITATION

Inviting people to spare their time to join co-design workshops is one aspect that is often easily overlooked. After all, "collaboratively" working on a topic requires enough presence at the event. Before the ArtSpace workshop, the student team observed a few workshops organized by the migration committee, one of which had only three participants present. Since that workshop was designed for a much larger group of participants, it did not run as intended, nor did it provide enough insights.

The lessons learnt is that the facilitator should always get personal confirmation from the candidate participants. What else, inviting one to two more people than planned can minimize the risk of last-minute cancellation.

4 TESTING

When designing a product, prototyping and testing are essential before shipping the product. Similarly, when it comes to preparing co-design workshops, it's wise to test the process. Ideally, involving real candidates into the testing can get the facilitators direct feedbacks from the audience they intend to engage. However, it may not be feasible to do so due to the limit of time and resource. In the

ArtSpace project, testing was performed in the form of rehearsal, i.e. the facilitators went through schedule of the planned workshop with pre-fabricated scripts and programs. The student team witnessed the distinctive difference between tested and untested workshop plans. The last workshop was rehearsed step by step, allowing the facilitators to be more familiar and confident about the process, while another workshop that is not tested, end up with lots of deviation from its original plan.

4.4 FOCUS OF ANALYSIS

A two-hour workshop with ten participants contains a vast amount of interactions, making it nearly impossible to make in depth interpretations in real time. Video record, on the other hand, makes it is possible to scrutinize every single interaction over and over again, making it an ideal tool to analysis the workshop afterwards. Meanwhile, video records reflect the events in such triviality that makes them double-sided blade: they contain a fair amount of irrelevant data, which renders extracting useful data time-consuming. As demonstrated in Chapter 4, it takes four progressive steps to go over the video in order to filter through and make sense of the data.

The focus of my analysis is "what kind of facilitatory acts encourages participants' goal-aligning reactions?" To answer this question, *first*, I identified key moments of the workshop where the facilitator attempt to set frames for the participants' actions. These attempts are highlighted with yellow color (see Figure 4-4). *Second*, I inserted interpretations of the facilitatory acts: what was the

purpose of each facilitatory act. These interpretations are inserted to the transcript with blue highlights. *Third*, I linked the facilitatory acts to the participant's reaction, to see if the reaction is aligned to an intended goal. *Last*, I tried to analyze why are the facilitators' attempt to set frames successful or unsuccessful.

The analysis comes in detail in Chapter 5. As decribed in section 4.2, the data presented in Chapter 5 has been selected and processed. The video data is presented in the format of transcripts. In addition, screenshots from the video recording is presented along with the transcripts. To protect the participants' identity, all faces in the screenshots are blurred intentionally.

Figure 4-4 A page extracted from the transcripts.

5 DATA ANALYSIS

5.1 WORKSHOP 1 - STUDENTS AS PARTICIPANTS

The first workshop aims to get students from design department to talk about their experiences and suggestions of study and life in school. There were 13 participants – students from different disciplines of design department. The participants were asked to fill in a *probe* (*see Figure 5-1*) – a daily diary of their activities at school, one week before the workshop. In the workshop the probes were reviewed in the opening session.

Figure 5-1 Probe used in Workshop 1

There were four facilitators at the workshop. However, their roles were not agreed before the workshop takes place. Two sets of tools are presented for the co-design session - blueprint of the building in large scale and miniature furniture with room-scale studio blueprint (*see Figure 5-2*). The blueprint of the building was used to

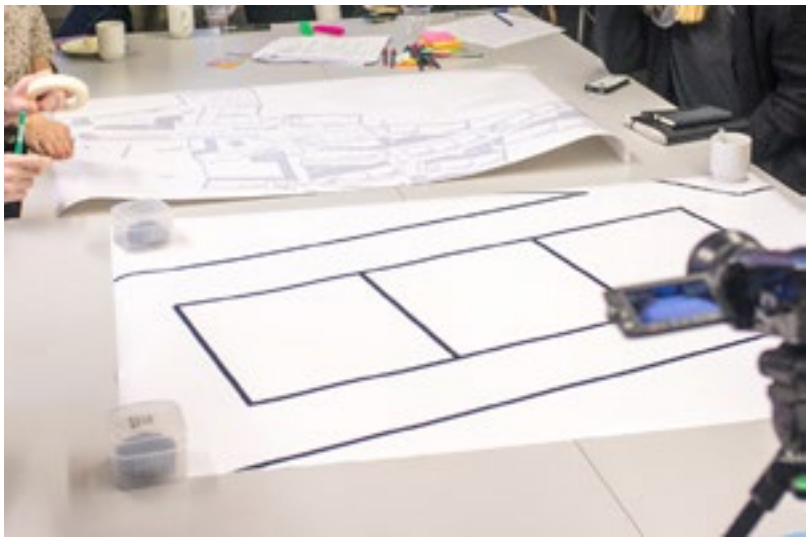


Figure 5-2 Blueprints in building-scale and room-scale as part of the co-design toolbox

Figure 5-3, 5-4 (On the next page) The co-design toolbox facilitated group discussion, and encouraged the participants to materialize their ideas. >


GROUP WO

5.1.1 SELECTIVE TRANSCRIPT OF WORKSHOP 1

01 Facilitator 1 (F1)

((Changes slide on screen to Väre concepts))

((Takes a box on the table, collects papers… appear to be wrapping up the previous session))

02 F1

((Orients to the participants))

03 F1

So we have two different plans for you. For these ((look aside)) are actually ((turns to the screen)) from the Väre concepts that they… that there has been an architectural competition, and this is the winning concept that the school is going to build. ((turns to the screen, then turns to and looks at the audience)) This is still really a concept.

((Looks at the sketches on screen))

They have some rough sketch plan about what is going to be there. ((Orients to Facilitator 2)) Right now we have time to ((Orients to the audiences)) tell what we

want. And what is good.

((Looks aside)) Because right now there is going to be ((Uses hands to gestures blocks, repeats:)) Right now there's going to be separate smaller buildings. ((Looks aside, seems to be sorry)) And I don't ((Turns to Facilitator 2)) really know that is the idea behind that. ((Talks to Facilitator 2)) Because … they don't want to share their ((Smiles)) information that much, ((turns back to the audience)) because they want our new ideas.

** The facilitator started the workshop by introducing the project background.

04 Facilitator 2 (F2)

((Nods to F1))

Yeah. Yeah.

05 F1

Now they're talking about separating bachelor students in one building ((use one hand to push away)) and the others separately. ((Orients to F2))

**A issue was brought up to intrigue the participants, and to raise their awareness of potential problems.

06 F2

Yeah. Yeah.

07 Participant (P)

((Raises head, frowns))

All the bachelor students?

**A participant asked more about the ‘separation’ issue, a direct response to the topic.

08 F1

((Looks at P, shakes head)) Yeah… But…

((Opens right palm)) that’s just an idea now.

But we don’t need to think about that. ((Right arm indicates the screen behind her)) We can just think about what ((looks at the audiences)) would be the idea.

((Turns sideways))

**Answers Participant’s question by stating the potential influence of this workshop to motivate the par

And we have two plans (layouts). ((Looks at the lay-outs at the side of the desk))

**Introducing the co-design tools to be used during the task.

The other one is more ((opens up forearms)) bigger scale for us to think about ((uses both hands, gesturing here and there)) different functions. ((Reached for the post-its on the table)) We have post-its…

09 F2

((Takes over printed space layouts from Facilitator 3)) Maybe… like big studios for … should be the best for you and ((points the layout in hand)) bigger layout to where ((orients to the flipchart next to her)) all these ((points to the content previously written on the flipchart)) actions and what we talked about before ((looks at the audience)) could happen in the layout. Which place would you like to have… for example, the kitchen and… you can think about how you ((uses hands to make a 'overall' gesture)) would like to spend your time in it.

**The facilitator gives instructions to the tasks.

10 F2

So we would like to ((leans forward, seems to be searching for something))… ((Turns to Facilitator 1)) Maybe we should take this? ((Takes up one roll of layout))

11 F1

Yeah.

((Turns to the audience))

Is it good if we form two groups. Maybe…

12 F2

Yeah.

13 F1

… or do you think it's good that we work all together? ((Looks at Facilitator 2)) Maybe we could work altogether…

14 Participants

((Looks at each other)) Yeah. ((Nodding))

**Due to lack of prior agreement, the facilitators try to agree on a plan at the workshop.

15 F1

((Takes the other roll of layout, tries to lay it flat on the table.)) This one is smaller scale [big scale layout, the studio layout] than the other one…

16 Participants

((Reach out to help fixing the layout on the table.))

17 P

((Points at the big scale layout))

What is this?

18 F3

This is a part of that.((Points at the big scale layout, then points at the small scale layout))

This is a “booth” from that. ((Pointing at an area on the small scale layout))

**The participant’s question helped with clarifying the frame.

19 Participants

((Examines the layouts, tries to understand))

20 Participants

((Uses tapes to keep the layouts in place on the table))

21 F1

((Takes a box, puts it on the big scale layout)) ((Turns to the participants who are trying to figure out the layout)) This is more you can think about that

maybe the different departments, like workshops or lunch places, in a bigger scale*. [*Small-scale layout, blueprint of the building] And this ((Slightly turns to the big-scale layout, points to it)) is for the actual studio, like you have the 7th floor. ((Points to

the studio area outside the room))

((Slightly turns to the bigger scale map))

22 F1

But, don't think about that much about the scale.

Let's continue what would be the…

**Stopped explaining the tools. Tries to guide the participants' attention on to the task.

23 F2

Where we would have the kitchen, the silent spaces…

24 F1

Here are some furniture. ((Takes the box, and pours the foam-made furniture models on the big-scale layout))

**Facilitator 1 introduces 2nd tool box.

25 P

Are those furniture (in the new building) going to be

used (ones)?

26 F1

Everything is going to be new there. But let's think about the big picture. ((Smiles at the participant.))

**The facilitator stopped the topic from deviating.

27 P

(I asked because…) Nowadays our desk is very uncomfortable to sit, so… only four people are using the table, but its size is very big, so… most of that is wrong… space.

28 F1

Yeah.

That's good… ((Reaching to the Post-its)) we have theses Post-its to collect some ideas. ((Distributes the Post-its. to the participants.))

29 Participants

((Look at the studio layout))

So what are the squares you have there?

30 F1

This (layout) is a studio, we can think about it as what we have right now. ((Pointing outside, spatial and furniture department))

31 F2

((Distributing pens))

32 Participants

So the idea of this is this is one big building?

33 F1

This bigger picture [the small-scale layout] is for you to think about your day, where would you like to be. This is used to outline the spaces. For example, as a furniture designer I like to have the workshop here. So it is very important that we got everybody's point of view. So you can decide this is a workshop, that one is a lecture room. You can propose which space could be what.

Facilitator 1 articulated the frame again.

34 Participants

So which one should we start with?

35 F1

We can start with the bigger one. We could think about

what kind of ways it could be better.

36 Participants

((A participant starts to talk about the parts that she likes, another one says he like to have the kitchen near the entrance so everyone could see each other))

37 F2

Write it down. “Entrance at the kitchen.”

37 Participants

((Start to discribe, discuss, and write down their ideas for the new space of art school))

**The participants acted in-alignment to the frame set by the facilitator.

5.1.2 SUMMARY OF WORKSHOP 1

The facilitator started by saying "So we have two different plans for you…"[01-03]. But instead of clarifying what were the 'plans' for, she moved on to the project background. A participant was intrigued by the background information, asked for clarification. [07] Since the question is not the workshop focus, the facilitator gave a response in brief, and tried to set frame for the next action by continuing introducing the plans. [08] "… where all these actions and what we talked about before could happen in the layout… how you would like to spend your time in it." [09] However, the frame-setting was not self-explaining. It set a direction for the participants, but was not clear about what is the goal, and what to do in order to achieve it.

During the workshop, the two facilitators discussed briefly about how to proceed the task, showing the lack of preparation before the workshop. [10-14] The participants were confused about what to do with the 'plans', asked, "what is this?" [17] Again, the facilitator answered "But don't think about that much about the scale. Let's continue what would be the…where we could have the kitchen…" [18-22]

Facilitator 1 introduced new material to the participants by pouring miniature furniture onto the 'plan', which is inconsistent with how they agreed to proceed before (see 10 – 14). [23] This was not an effective facilitatory act. In fact, it confuses the participant. One participant asked (again), "So what are the squares you have there? [28], So the idea of this is this is one big building? " [31]

Facilitator 1 answered the question by scaling down the frame:

"...think about your day, where would you like to be... you can propose which space could be what." [32] This time, the facilitator successfully communicated her intent through further explanation. After asking "so which one we should start with?" [33] the participants started to act in alignment to the goal set by the facilitator. [35-37]

5.1.3 ANALYSIS OF WORKSHOP 1

As the transcript shows, the facilitator attempted to introduce the tools for the participants to contribute ideas to the space of new design department. The facilitatory acts were not optimal and effective, despite the participants in the end understood the frame that the facilitators trying to set.

As is shown in action 10, Facilitator 1 and Facilitator 2 were having different opinions on how to proceed the workshop. This did not interrupt the workshop nor confuse the participants because Facilitator 2 was able to quickly adapt to Facilitator 1's act. The facilitators introduced the goal vaguely in the beginning, but it took a long process (8 minutes) to get the participant fully understand what to do with the material.

The participants were acting facilitatively when they asked questions that help to clarify the goal. The facilitators were responsive and pertinent to give answers.

The facilitatory acts are not particularly productive in this workshop because it lacks of clear frame-setting acts. The shortage of coordination between the two facilitators' acts, and the lack of clear schedule reflects the fact that the facilitation was not tested or rehearsed. However, the participants aligned their actions to the goal

set by the facilitators. And most importantly, contributed a multitude of materialized ideas (see Figure 5-3, 5-4, 5-5) that are diverse and insightful for the project. Overall, workshop 1 was productive.

Figure 5-5 In Workshop 1, co-design toolbox assisted the participants to collaboratively create school spaces.

5.2 WORKSHOP 2 - TEACHERS AS PARTICIPANTS

The second workshop switched focus to other two user groups of the new building – the teachers and researchers. There were 7 participants in total, among which only one researcher. They were given identical pre-workshop task as the first workshop – daily diary as probe that reflects their activities, time-allocations, etc. at work. The facilitators intended to review the probes in a similar fashion as the first workshop.

With the relatively successful outcome of the first workshop, the facilitators were confident to follow similar schedule and programs designed for the first workshop. Workshop 1 provided the facilitators valuable information for improving the facilitation, e.g. "It's good to have the probes, so the participants can get into the topic quicker. But the reviewing session is too long. It may be good to ask everyone to join the discussion, instead of letting each participant read through her probe."

There were four facilitators as a team. Their roles are pre-defined as such: Facilitator 1 (F1) is the main facilitator, leading discussion and enact schedule; Facilitator 2 (F2) will actively assist F1 by making notes on a flipchart as the workshop proceeds; Facilitator 3 (F3) takes notes of the workshop; Facilitator 4 (F4) will assists the co-create session of the workshop.

For the co-create session, three sets tools were made:

Blueprint - similar as the layout used in the 1st workshop, but printed on A3-sized paper (see Figure 5-6). There were plenty of blueprints for each participant. The intended usage of this tool is to

allow the participants to draw and write their ideas.

Affiliate pictures – printed pictures of various kinds of public creative spaces. Those pictures were selected by the facilitators, fixed onto a wall of the workshop room. The intended usage of this tool is stimuli for conversations with the participants.

Acrylic furniture blocks – this tool was an upgraded version of the 'miniature furniture' used in the 1st workshop. They were laser-cut acrylic pieces that represents furniture and equipment. The intended usage of this tool is to enable the participants to intuitively plan an indoor space.

The transcript illustrates the facilitatory acts at the start of the workshop.

Figure 5-6. Blueprint used in the 2nd workshop.

5.2.1 SELECTIVE TRANSCRIPT OF WORKSHOP 2

01 Facilitator 1 (F1)

((Takes a seat))

Now there's going to be this new school, like Art in Aalto I guess. The Campus 2015 now they are talking about. ((looks at Facilitator 2, F2)) And we are a group of students, who are doing our own spatial concept for the school ((looks at one of the participant – the participant nodded)). And then we're giving the concept to the designers, to the architects and… ((looks at F2 again))… yes. So now that we have had a workshop for students. ((nods to another participant)) What they think about and … I think that this has been really good. Because they have been thinking ((Looks at F2 and making a gesture for "grounding")) in their own workshops. But I think that we have got something new because, ((F2 nods)) of course we know students something about the school we've been using.

02 F1

((Makes eye contacts to all the participants at the table))

And now we want to have this workshop for you, teachers, professors, and researchers. And get your point of view.

But for our spatial concept we are now concentrating on the spaces that we're mostly using. So spaces that students use, and teachers for teaching spaces, and also researcher offices. But the spaces that mostly

students us… we don’t see… we don’t… we can talk about it but I don’t think we have enough time to concentrate and we don’t have much knowledge about those spaces.

03 F1

((Stands up and walks towards the computer next to the projector screen.))

And… ((Changes the slide shown on screen)) there’s a few pictures of this Väre concept, this architectural concept from the architectural competition. ((Walks back to her seat, sits down)) I guess ((looks behind her, at the screen)) all of you have seen something about it. And now… that it’s going to be changed a bit, of course. Now we got this information more about what we need. What facilities and requirements we have. But this is kind of like a style that they have. But we don’t need to concentrate on that. We can just concentrate on now what we want to have. ((Raised

voice a bit)) But we can start on ((looks at the participants)) you have all got these probes. And hopefully you have had time to fill the papers. And maybe now we can have some kind of open discussions about the spaces that we have now and…

**The facilitator explained to the participants the project's background and progress. The description was unclear and lengthy.

04 Participant 1 (P1)

((Raises one hand, tries to interrupt F1))

Sorry I have a question… I was just wondering… so were you given this task? Or… I don't know about the background of it…

((Looks at F1))

**The question shows that the participant required further clarification of the background.

05 F1

((smiles and nods))

06 Participant M (PM), a tutor of the project

((Looks at everybody, tries to confirm their confusion))

Maybe I can explain… because I am the only one from there.

**Because of the unsuccessful introduction at the beginning, the tutor decides to help the student facilitators to clarify the situation.

07 F1

((Smiles to PM, agrees that she could explain))

** The facilitators give their tutor a chance to assist their facilitation.

08 PM

Ha, this is all very hidden.

Yes, there's like a Arts Campus workshop. It is a… workshop like a team, which is … Tapio Koskinen, he's sort of the chairman of that. And we have been… and me and Salu(another tutor of the porject), we then found this student group ((points to the facilitators)) have been part of that… that project. And that's actually a project where exactly these things are discussed like, "how the users are now relating to the new building". And there's this company whom this school I belong, hired to do the work. And that's called… ((looks for reminding, Facilitator 1 says "Workspace")) Workspace.

That's like… actually quite a big company here in Helsinki who has been working with very many projects. And… so that they are professional in that.

So this… ((draws a circle with her finger on the table)) [exact word unclear, maybe Finnish word for "committee"] were I am a part of and Salu is a part of, we hire this company to make the concept. All the time me and Salu we were like … there are lots of other people from the school too, they are secretaries and from many different departments... But not so many

teachers and not so many researchers either. So we were sort of looking at each other with Salu that: “isn’t there so much expertise in this school itself, and the students. So that we could actually work and give input to this from inside also… Because it’s sort of the whole thing in our eyes starts to slip to this Workspace company.

It became very abstract and not so much anymore related to what we have here. So the situation was a little bit funny and… We then suggested why don’t have

this group of student who's sort of "helping" the Workspace company, in making what they are making. So that there's sort of a team from inside the school, who can then really put some effort and time to see what they're going there. And now there has been hopefully some cooperation with Workspace. And actually Tuomo Marttala who is the leader of this team, was very excited of the student project. So he was really delighted that we are doing this and we are arranging a group of students who are working with this…
So this is what behind everything. So I'm very happy that this is now happening. Because otherwise it might have been we are sort of left out of the whole…
((Looks at the other participants, confirms that they are now clear about the background))

**The tutor helped the facilitators to communicate the project background.

09 F1

((Nods at PM))
That was pretty good. Maybe I can tell I'm F1 ((refers to herself, then introduces the rest of the team)), F2, F3 and F4 is sitting there. So please if you have questions you can interrupt and say everything you have.

10 Participant 2 (P2)

I'm very curious about how much Verstäs Architects are involved in this project, there… what is going on.

11 F1

Right now I think that they don't know. I think that that group… ((Frowns, turns to PM)) How do you say that?

12 PM

It's a … group. Steering group. Yeah, it's a steering group.

13 F1

I think that they haven't even met Verstäs Architect. ((Looks at PM))

14 PM

No, we haven't. And I was just nominated to be a part of the steering group. It's like "you can't say no". So everything is very… ((lowers her voice)) sort of bureaucratic.

15 Everybody

((Laughs))

** More background information is revealed by the Tutor

16 P2

Because there are of course certain… starting points already existing, like the size that has already been determined, the budget of course, and then the existing mega structure, basically. So do we know basically where we should be placed in that campus area already or…?

17 F1

No.

18 P2

What abstract level we are on?

19 F1

We’re on a really abstract level right now.

** Participant 2 asked more questions about the background information. This is largely because the facilitators were not able to make an informative introduction.

20 PM

The whole thing is pretty abstract. The whole Workspace, the project is also on a really abstract level.

21 F2

So we’re now trying to get something concrete, some thing… pretty… your opinions… So we can bring them forward and …

22 F1

First we want to ask you that we should… we will want to have the information that they have… they got. But right now Salu and … that we'd better not know that much. And we are just concentrating…

**The facilitators attempted to state the goal of the workshop, but it lacks of clarity.

23 Facilitator 3 (F3)

I think that Tapio has been planning that the master students would be located in this new building, and next to it… no, far away, that there's a building designed… no, an existing building that would accommodate all the bachelor students. And also the media department would be outside this building. That's the rough idea.

24 F2

Yeah… that's all we know. ((Laughs))

25 P2

That's… quite a big decision.

**The facilitators raised concerns for the participants.

26 PM

But the thing is … we can actually influence now. Because the steering group still has some power. But it just doesn't have the time… all these people… we all have so much other things to do to really…((shrugs)) get involved in this. So I'm sure we're going to

get some very valuable information from the student group.

27 Participant 3 (P3)

Also in this process, there's … this new building is only part of the renovating of the core campus area of Aalto… so all those experience what they gain they can use in also this renovation process of facilities and what kind of aims there should be and what kind of pedagogical models for those tasks. And how it combined with our needs. So it's going in all different areas.

28 F1

((Nods))

29 PM

So it's early enough to make a difference now.

((Nods and looks at everybody in the room))

30 F1

Yeah, that's good.

But yeah, let's have an open discussion about what you have filled.

What are the facilities that you think… because now there are different department now here. And for us it would be very important that we got some information about different things that we … different tools and facilities.

31 F2

((Stands up, prepared for writing on the flipchart))

32 F1

And maybe for this discussion, let's concentrate on the existing building… let's continue to the future… what would be the idea.

**The planned goal at this stage, which was to discuss about the probe questions, was not clearly communicated.

33 P1

Who starts? ((Laughs)).

34 F1

((Laughs))

Any one can start, just say something.

**The facilitator gives clear instruction to the participants.

35 P2

((Clears throat))

I have written at least some parts here.

I was also shocked how much I move around in general. And how many different kinds of events are taking place in various places. Not only in this school but around the city. Sometimes they’re directly connected to the school, some times, indirectly…

…

**The participants responded to the facilitatory acts with goal-aligning actions.

((P2 started to talk his needs to work in different locations, and his demands in the tools that he needs to make his activities possible. He can use less space, and share with others))

((P3 shows her opinion in being mobile and sharing offices with other teachers))

((F2 was writing keywords on the flipchart. In general, the facilitators were relatively quiet, not commenting or asking questions to guide the conversation. Instead, they were responding with polite smiles and

nods.))

((P1, a teacher, starts talking a different perspective about working in studio))

((F1 asks about the difference between ceramic studios and furniture studios, and how P1 is satisfied about the teaching environment))

((F1 asked: Do you think a space for the teachers to meet students is needed?))

((Participants answered: Professors' lounge is not needed. Nobody has time to be there. At lunch we meet.))

((The discussion moved to BA and MA separation, The committee's space/equipment-oriented thinking vs. teaching-oriented thinking.))

**The facilitatory acts are not guiding the participants quickly enter the co-creation mode. Instead, the interview style of facilitation drives the workshop to a prolonged discussion, without materialized ideas.

…

36 F1

I think we can then… go on to the next task. To the talking… and… also writing. ((goes to the computer to change the slide))

[The screen shows – TASK 1: a) FUNCTIONS. Add to table post-its. b) ATMOSPHERE. Add post-its to the pictures.]

37 F1

We have this two… two different tasks together that we

can do. ((moves print materials already on the table))

One, we have… pictures of the Väre that you could fill in post-its relate to the functions that we've been talking about – what in the future we will need in the new school.

And then we have ((raises left hand to point to the pictures prepared on the wall)) … from different offices and schools and etc. that we would like that you would fill post its also there… to find out some good and bad things from that.

It can be functions but in these pictures it might be easier to talk about the feeling and looking also. ((The participants follow F1's hand to check the pictures on the wall))

38 F1

But maybe, maybe to add here…((stands up, reaches out for the pens on the table)) more about functions. ((distributes the print material to participants at the table))

But also… if you have something about the rooms and feels also you can add.

((Supportive facilitators join, start to prepare for the task with F1))

39 F1

Here is some post-its, bigger post-its and pens. And because the pictures there ((points at the picture wall)) are quite small, you can use the smaller post-it there…

40 F3

((picks up the post-its, speaks in a low voice)) Yeah… I have some here.

41 F1

You can also use those… but… so that later on we could know that which post-it goes to which picture. We can start with the Väre proposal that we have… now.

**The facilitators tried to introduce the two sets of workshop materials, and what is expected from the participant, in an ambiguous, confusing and self-contradictive manner.

42 One Participant

((frowns))

Could you repeat to me… in Finnish, and shortly. What do you want me to do?

43 F1

((Starts to explain in Finnish))

**The participants did not understand the goal. The attempt of frame-setting was failed. Clearly the facilitatory acts are not productive.

5.2.2 SUMMARY OF WORKSHOP 2

In this workshop, the student facilitators started by introducing the project background and progress to the participants. [01] They acquainted the participants that the goal of the workshop is to "get your point of view".

In the introduction, there's evidence that the facilitators assumed that the participants had prerequisite knowledge about the project: "I guess all of you have seen something about it." This assumption was wrong, due to the lack of understanding of the participants. Assuming the participants were informed about the project resulted in an inexplicit introduction.

The participants further disclosed that there was going to be some change - but the focus of the workshop was "what we want

to have". Then she quickly recapped the "probes", and set frame for the next step: "Now we can have some kind of open discussions about…" [03]

However, the participants didn't seem to follow the facilitator's background introduction: "Sorry I have a question… I don't know about the background of it…" [04]

Participant M, who is also one of the tutors of the ArtSpace project proposed to give a further explanation of the project background from her point of view. [06] The facilitator agreed with the PM's proposal. This revealed that the facilitators were not prepared.

Since the initial attempt to proceed the workshop was interrupted by a participant's question, the facilitator tried to re-frame by stating: "So we are now trying to get something concrete,… your opinions…" [21] and "let's have an open discussion about that you have filled", "let's concentrate on the existing building.."[32] Even though the facilitator didn't mention explicitly what "you have filled", the participant knew what is "that" was referring to in that context, which was the probes that they filled in before attending this workshop. As result, one participant cleared throat, and started talking about his experience. [35] This was clearly an action aligning to the unstated goal.

As the workshop proceeded to the "co-creation" phase, the facilitator announced, "we can then… go on to the next task." She showed a slideshow on screen at the mean time to help articulating the frame. [36] She further articulated the task: "fill in post-its relate to the functions that we've been talking about - what in the future we will need in the new school." Then another task: "fill post

its also there... to find out some good and bad things from that." [37] She then rethought about the task, saying: "But maybe, maybe to add here... more functions". Then "But also.. if you have something about the rooms and feels also you can add."

Behind these facilitatory acts was the goal of getting the participants to collaboratively work on the new building plans. However, the participants didn't seem to understand the goal clearly - no one moved to the task that the facilitator intended them to work on. Even worse, one participant asked the facilitator: "Could you repeat to me... in Finnish, and shortly. What do you want me to do?"

5.2.3 ANALYSIS OF WORKSHOP 2

The facilitator spent two and half minutes (00:45- 03:15) to introduce the background and set the goal for the workshop. But the participant's question showed that the facilitator's attempt being ineffective. This was due to that the facilitators assumed the participants have prerequisite knowledge of the project.

Participant M (PM), being one of the tutors of the facilitators and part of the project committee, is a special resource in this workshop. However, the facilitators did not have a consensus with PM. So she was not intentionally being a facilitator. This is problematic because the facilitator should perform facilitatory acts that serve the goal of a co-design workshop. Since PM was not involved in the preparation of the workshop, she did not have the same interpretation of the goal of the workshop as the facilitators. Thus her involvement risks the workshop from being productive.

Second, the role of the facilitator was obscured after this incident. M present herself as 'the teacher-who-knows-better' by giving

complementary explanations. This may benefit the participants with more accurate and authenticate information. But it also weakened the student facilitators' role in relation to the teacher participants. This posed them in a school-like hierarchy, in which the students tend to take less initiative.

The choice of workshop space may have a negative effect for the student facilitators to establish their lead roles in the workshop. As Muller(2003) claimed, a workshop should ideally be held at a "third space" for the participants, because they can act more comfortably without concerning their role in reality. In the case of ArtSpace project, all workshops are held in the same classroom at school, which is clearly a weak point of the preparation.

Three sets of toolboxes were prepared to aid facilitation in this workshop. Yet due to unsuccessful frame setting and ambiguously communicated goal, two out of the three were left untouched. Evidently the facilitatory acts are not productive. As a result, the participants were not acting in alignment to the goal.

The goal of co-design workshop in general is to get the participants to collaboratively work within a set frame, and towards a recognized goal. The deliverables of co-design workshops often come in some form of "materialized ideas" – collages, drawings, collection of post-its, to name a few. The fact that the participants in workshop 2 didn't use two out of the three sets of toolboxes, demonstrates that there are not enough materialized ideas available as an outcome.

It's hard to argue if the toolboxes are suitable for the project and participants or not. Because the unused toolboxes were simply not

introduced to the participants. Furthermore, this exhibits the lack of preparation of workshop 2.

5.3 WORKSHOP 3

The third workshop focused on communicating the findings of the research and result of the first two workshops to the major stakeholders of the ArtSpace project. There were seven participants, from the management level of the school, the spatial design contractor and the architects of the new building. There were five students as facilitators. One was the main facilitator, while the other four principally act as 'student personas' during the co-create session.

Since the purpose of this workshop was to exchange ideas and communicate research result, the participants were asked to present key information from their previous work on this project.

As a result of the other two workshops, the student team has concluded four personas that represented different types of students in Aalto ARTS. To communicate these findings, the facilitators designed a game named "space puzzle". The facilitators prepared colored cards of different sizes. These cards represent different spaces. For example, a big piece of red, square card represents a lecture hall for more than 40 students; a small piece of rectangular, green card represents a workroom that allows individual, quiet work.

During the workshop, a "persona", acted by a facilitator, describes her activities in the school, while the participants discuss

about her needs, then arrange the cards to create a space accordingly. Then to the same canvas, the other three personas are added, each with their own needs. The participants must collaboratively design a collective space that meet the needs for all these personas, while not disturbing each others' needs. The goal of this game is to communicate the design students' needs to the committee and the architects.

5.3.1 TRANSCRIPT OF WORKSHOP 3

00 Facilitator 1 (F 1)

((Clears throat and claps hands))

Err… May I have your attention? I think everyone is here. So we'll start early.

Hello everyone. Welcome to join us for this ((facing the audience, rises right hands to the screen)) our co-design workshop. I hope this would be insightful for all of us.

01 F1

((Gestures a circle))

How about we start with a round of short introduction of who you are, where you work and what's your role in this project?

**The facilitator communicated an instruction (set a frame) with clarity.

02 Participants

((Start to give short self-introductions one by one))

**The participant acted in-alignment to the set frame.

03 F1

((Changes the slide, orients to the screen))

So far, as Participant (P1) said, we have done a series of workshop. We used probes to gather the user's insights. Discussion and hands on build to get the user's opinion. And this one is for the teachers and researchers. There's quite a bunch of findings. ((Changes the slides)) We have been summarizing all the findings and analyzing the user's demands. To understand gener-

al users' needs. To help us get a basis understanding of what's students' lives like…

04 F1

So… today's agenda; first we're going to start with a series of presentations. ((Looks at the screen))

((The screen shows a list of agenda))

**The slideshow assists the facilitator's communication.

Participant 2 (P2) is going to present, space for teaching and learning.

And then Participant 3 (P3) is going to present efficiency of space.

Participant 4 (P4) is going to bring us some creative spaces in Arts.

P1 has some of his own experience to share with us.

((Orients to the audience))

Then we're going to introduce the personas that we've

built based on our research findings in those workshops. Then based on that, we're going to have a break first, then start the co-design session, which is going to last up to one hour.

In the end we're going to have a review together.

05 F1

((Orients to P2, starts talking to him))

So Let's start with the presentation…

**The facilitator clearly communicated the agenda of the workshop, and what is expected to do next.

06 Participant 2 (P2)

((Stands up, takes his computer with him, prepares for the presentation))

…

07 F1

((After P2's presentation))

Thank you for your presentation. Now let's move to the

next (presentation).

…

((1 hour later, all four presenters finished their presentation))

08 F1

((Changes the slide, script in hand, waits the audiences to stop talking))

It's very interesting that P1 presented how the 'messy' space can be creative. From our experience, we don't treat this school as a place to (only) take lectures ((looks at all audiences)) but a place to interact and to live. We live with our prototypes and stay up late before presentations. It's very important to have a comfortable place to be in. ((points to the screen)) During our workshops and research, these topics keep occurring. I think it's good to show you…

**The facilitator gives comments to the participants' presentations, and introduces the upcoming agenda.

[F1 goes through the key findings from the previous workshops]

…

09 F1

Now let’s have the personas presented.

((Gives stage to the other facilitators))

10 Supportive facilitators

((Walk to the screen, and start to explain each of the personas))

11 F1

Thank you! Then we have a 10-minute break.

[Group 1]

**The following part of transcript shows one groups co-creating session. Because the goal and instruction of this activity is clearly communicated through facilitatory acts, the participants collaborates smoothly to perform the co-creation task.

12 P2

((Looks through the cards))

I think we need a project room.

13 F2

Project room…

OK. So we should write it down. Like a big one?

14 P2

Er.. It’s a small one.

15 F2

OK. ((Hands over a marker to P2))

16 P2

((Starts to write on a blank card))

17 P1

((Found some pens))

Here are some pens you can use.

18 P2

((Finishes writing, hands over the card))
This is a place where you can leave your flipchart…on the walls…

19 F2

Hmmm… That would be really good.

20 P2

…also where you can leave your models…

21 F2

Like a reservable room..?

22 P2

((Nods)) Yes.

23 F2

OK. And… ((Talks while puts blue tags onto the back of the cards)) also we're doing prototypes... We're doing a lot of prototypes... out of wood and cardboard, that don't need big machinery… and we are using or bigger

workshops also. So…

24 P2

Do you have more or less the same team… throughout the whole assignment… or?

25 F2

((Nods)) Yes. Same group.

26 P2

So ideally there would be these project rooms, where you can make some quick and dirty prototypes.

27 F2

OK. ((Talks to F3)) And then… Where is the bigger workshop? ((Points to a card written “Workshop”))

28 F3

((Hands over the “Workshop” card to P2.))

29 P2

((Positions the card written “Workshop”))

30 P4

So it’s a different workshop? Or.. just…

31 F2

Yeah, yeah. Different… And a 3D-printer.

32 P4

Do you need the machinery?

33 F2

Both. Because in the end we’re going to make the final prototype, which has to be usable and has to be done

in the bigger workshop. ((Makes gesture to indicate the scale of the final prototype)) So we need that.

34 F2

And, also we need to meet the teachers. So we need the teachers' offices or some meeting rooms.

…

35 F3

Shall we make room here so that the 2nd persona's need can be accommodated? ((Drags the canvas to make room))

36 P2

((Points to the cards on the canvas, talks to F2)) Actually, I didn't know that you have these needs here.

**The co-design activity goes as planned. The assistant facilitators are able to guide the process.

[30 mins after the group workshop starts]

37 F2

((Talks to F3)) Shall we switch places so that you can continue here?

38 F3

Yes. ((Stands up and switch place with F2))

39 P1

The idea would be that we make kind of another plan in her point of view. ((Points to F3)) And then we start to connect them. Once we have that..

40 P2

((To F3))

So… who are you?

41 F3

((Raises right hand, points at the screen))

I am this “peace and quiet 3rd year industrial designer who’s making his thesis”

42 P1

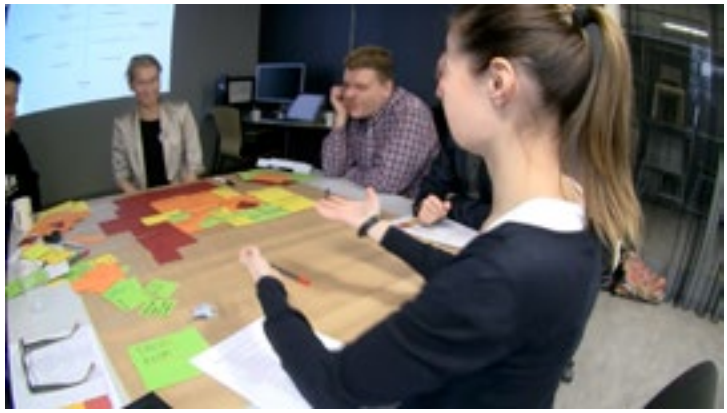
It’s like F1 actually…

43 ((everybody laughs))

44 F3

Yeah. ((Uses script to tell about the persona)) So I'm mostly researching using library… and maybe use "thesis room" or some quiet room to have my concentration on thinking and… researching and… also doing only by myself.

45 ((P1 and F2 starts to find cards that describe her persona's needs))



…

((About 50 minutes after the start of 2nd half of the workshop))

46 P1

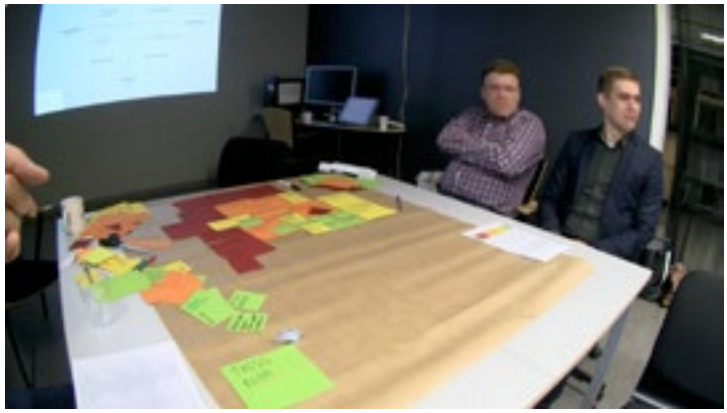
I think… F1, it's good time to…

47 F1

Yeah. OK. Yeah… Let's switch.

48 P2

So.. we remain…?



49 P1

Yes, we remain, just the students change. ((Points to the canvas on the table)) And we look at our plan… critically. Like… if you would enter our building. What would you do? If you think of your task than you have just explained there. Does this plan work at all?

50 F2

((At another table))

We can add but we cannot take anything away.

51 P1

Yeah. Don’t destroy these.

((To F4))

OK. What role you are? Quickly explain who you are.

52 F4

I’m a BA textile student…

[About 1 hour after the start of 2nd half of the work-shop]

53 P1

((Claps hands))

OK. Please. It's time for the wrap-up. The students are going to create a… deliverable, out of this.

((Points at the convas)) These are going to be key result of the final project.

For that we are going to hear the explanation of what was the thinking behind the visuals that we have at the moment. We start from there, and continue to here.

((Points to the farther table))

So please explain what's the thinking there.

((Everybody gathers around the table.))

54 F1

So… people who have been on this table all the time… start.

((No one talks for a moment))
((Talks to a participant)) Do you like to say something?

55 Participant
OK. Students, do you find it's working?

56 F5
Well…

57 P1
Please explain in your own words, how you came up with this kind of scheme. What does it hold…

58 F5
OK. I'm a First year IDBM student…

((The students explains their considerations when they were making the space one after another.))

5.3.2 SUMMARY OF WORKSHOP 3

The facilitator started with a welcome to all the participants [00]. He then set the first frame of the workshop by saying: “How about we start with a round of self-introduction…?” [01]. The articulation of the frame was quite concise and straightforward. This resulted in the participants introduces themselves one-by-one. [02] It was an effective frame-setting, since the participants were acting in-alignment to the goal set by the facilitator.

He introduced the project background to the participants briefly [03], and then went straight to the agenda [04]. He used slideshows to aid the articulation of the frame during the process.

The facilitator then set another frame by orienting to Participant 2 (P2) by saying: “So let’s start with the presentation”. This facilitatory act contains clear information. All the participants understand what did “presentation” mean in such context – it was mentioned shortly before, when the facilitator introduces the workshop agenda. P2 apprehend what presentation the facilitator was referring to – it was the presentation that he was asked to prepare before the workshop. So as a result, P2 acted in-alignment to the facilitator goal by giving his presentation to the audience.

The facilitatory acts were carefully planed before the workshop. The facilitators had a common understanding of the workshop goal and detailed agenda. So during the workshop, no further communication about the facilitaton is needed. Assistant facilitators are providing sufficient help to engage the participants in the co-creation activities.

5.3.3 ANALYSIS OF WORKSHOP 3

In this workshop, the facilitation was well prepared by scripting, rehearsing and staging. The workshop invites experts to give their views in their field so that every participant was well informed and prepared for the topic. The workshop process was carefully designed, and rehearsed. The facilitators had a common understanding of the goal of the workshop, and their share of responsibility in the workshop. Each step and task was clearly shown in the scripts. It was an effective tool for the facilitator to perform according to the plan. What else, the task was clarified multiple times: the persona concept was introduced, the facilitator gives instructions, and in each workshop group, there are three project members who were on the same page of what to act. The number of facilitators was dominant, and the staging was framing the task well, which ensures the workshop could not be largely detoured. Although the participants who are not working with the school is slightly alienated, the participants' identity, being not very familiar with each other, created an equal atmosphere to allow free discussion.

In general, the facilitatory acts were straightforward, well-prepared, and in the workshop. Their facilitatory acts successfully set frames for the task. The outcome of the workshop incorporated everybody's input, in a solid, traceable manner. Thus, the workshop was successfully facilitated.

6 KEY FINDINGS

The analysis is not focused on co-creation tools, rather it concentrated on the facilitatory acts and their consequences. The analysis reveals that the outcome of a co-design workshop is highly related to the effectiveness of facilitatory acts in aligning participants' acts to the workshop goal.

First, a clearly defined and communicated goal is fundamental to co-design workshop facilitation. The facilitator should always give a thorough briefing of the project background because the participants have different level of knowledge about a project. It's possible that a participant, being an expert in certain field on one hand, knew few about a particular project. Co-design as an approach to gain complete understanding on a target user group, highly relies on diverse knowledge of the participants. Thus it's not a favorable mindset to assume that the participants had same amount of project-specific knowledge. Sometimes, however, even though a workshop had a clear goal to start with, it might not be translated into the participants' action as intended. This variation is caused by the clarity of the goal perceived by the participants. If the goal leaves the participants too much room for their own interpretation, it is likely to result in a lot of unwanted random talks.

Second, the facilitator should also give clear instructions on the tasks and expected outcome of each task. Not every participant is familiar with the co-design tools and process. It's also normal in co-design to tailor co-design tools according to the workshop goal. Assuming that the participants knew about the process or tools can result in poor articulation of the frame and goal, leading to an unintended result. To make the workshop productive, it's necessary

to precisely disclose how to use the tools, and what is expected from the participants. Rehearsal the articulation and testing the tools on people who had no experience with can raise awareness of the issue. And reduce surprise in action.

Third, materialized ideas and other form of documentation as a mirror of productive co-design workshop. Documentation is important. Encouraging participants to join the hands-on creative session will lead to documented ideas. Just talking will lead to undocumented ideas, which will not contribute to the final designs. Vaajakallio (2012, p. 76) also pointed out that "documentation is critical for co-design gatherings, to allow learning the reasoning behind resulting artefacts or scenarios." The outcome should be constructed, situated in the project scope. It should contain rich information, both visual and textual, so the design team can relate to later in project.

Fourth, scripting and rehearsing the workshop can improve understanding of the goal within the facilitating team, and test co-design tools and workshop plan. A script of the workshop process gives the facilitators a checklist so that no steps were forgotten. Cautious, deliberate preparation before a workshop reduces the chance to get an unexpected result from a workshop. For example, in the second workshop, two out of three sets of co-design tools are left unused. As a consequence, the planned tasks are not executed and the workshop drifted by random discussion.

Fifth, facilitator should establish their role in leading the workshop process. The participants may have a stronger social status in relation to the facilitator out of the workshop, yet this should not be

the excuse that the facilitator give up his/her responsibility in leading the workshop. As seen in the second workshop, the facilitators let their teacher to take over the spot light. Consequently, it disturbs the original workshop plan, putting the workshop in jeopardy.

7 CONCLUSION

With co-design becoming an ever popular approach to tackle complex design challenges, the need for effectively engage various stakeholders is growing. Workshop as a major touch point in co-design process, need to be productive so that the outcomes are insightful to the project. Co-design workshops rely on the facilitator's input, facilitatory acts, to get the expected results. The ArtSpace project allows me to take a closer look to the facilitatory acts in the selected co-design workshops with the microscopic lens of video analysis method. The analysis of these workshops revealed both productive and unproductive facilitatory acts, which can help co-design workshop facilitators to achieve more valuable co-design outcome.

The foundation of a productive co-design workshop is clearly defined and communicated workshop goal. Without a goal, the facilitators will not be able to act in consistency, nor get the participants to generate insightful outcomes. If the goal is not properly communicated to the participants, they will have difficulty in understanding the purpose of their contribution, thus not being able to effectively contribute to the project.

Materialized ideas are key to facilitate shared understanding, group learning, as well as collecting and passing along ideas generated during a workshop. Materialized ideas can exist in various formats, e.g. participants' writing, drawing or co-creation from provided tools. Being visible or/and tangible to all the participants, it allows everyone present to engage in the discussion and build upon each other's ideas. In later phase of the project, materialized ideas provide the design team rich information to interpret, analyze and

reflect upon. Without the present of materialized ideas, it is difficult not only for the participants to engage in the co-designing, and the workshop risk becoming random, unorganized discussions.

The research question “How do different kinds of facilitatory acts influence the outcome of co-design workshops?” is answered by analyzing three ArtSpace workshops. The FADA method proved to be helpful in video analysis process. I have identified key facilitatory acts, their consequences and if they are productive to the workshop or not. I further analyzed the reason for each facilitatory acts, and suggested how can they be improved be comparing horizontally the facilitatory acts of all three workshops.

The shortcoming of video analysis is that due to the amount of detail, only a few facilitatory acts can be analyzed in detail. My personal participation in the workshops allows me to identify the key facilitatory acts when reviewing the video data. If the validity of the research to be improved, I would apply the findings in facilitating other workshops to see if they lead to productive co-design workshops.

My thesis and its findings can be used as a reference in facilitating co-design workshops, as well as other research that involves video analysis.

8 REFERENCES

Berry, M. (1993). Changing Perspectives on Facilitation Skills Development. Journal of European Industrial Training, 17(3). http://doi.org/10.1108/03090599310026355

Brandt, E. (2006). Designing Exploratory Design Games: A Framework for Participation in Participatory Design? In Proceedings of the Ninth Conference on Participatory Design: Expanding Boundaries in Design - Volume 1 (pp. 57–66). New York, NY, USA: ACM. http://doi.org/10.1145/1147261.1147271

Camus, D. (2007). The ONS Productivity Handbook - A Statistical Overview and Guide. PALGRAVE MACMILLAN.

Eriksen, M. A., Brandt, E., Mattelmäki, T., & Vaajakallio, K. (2014). Taking Design Games Seriously: Re-connecting Situated Power Relations of People and Materials. In Proceedings of the 13th Participatory Design Conference: Research Papers - Volume 1 (pp. 101–110). New York, NY, USA: ACM. http://doi.org/10.1145/2661435.2661447

Hagen, P., & Rowland, N. (2011). Enabling Codesign [Orgnisation]. Retrieved from http://johnnyholland.org/2011/11/enabling-codesign/

Kankainen, A., Vaajakallio, K., Kantola, V., & Mattelmäki, T. (2012). Storytelling Group – a co-design method for service design. Behaviour & Information Technology, 31(3), 221–230. http://doi.org/10.1080/0144929X.2011.563794

Koskinen, I., Zimmerman, J., Binder, T., Redström, J., & Wensveen, S. (2011). Design Research Through Practice - From the Lab, Field, and Showroom.

Lee, J.-J. (2012). Against method: the portability of method in human-centered design. Helsinki, Finland: Aalto University School of Arts, Design and Architecture, Department of Design.

Lucero, A., Vaajakallio, K., & Dalsgaard, P. (2012). The dialogue-labs method: process, space and materials as structuring elements to spark dialogue in co-design events. CoDesign, 8(1), 1–23. http://doi.org/10.1080/15710882.2011.609888

Madden, D., Cadet-James, Y., Atkinson, I., & Watkin Lui, F. (2014). Probes and prototypes: a participatory action research approach to codesign. CoDesign, 10(1), 31–45. http://doi.org/10.1080/15710882.2014.881884

Mattelmäki, T. (2005). Applying probes – from inspirational notes to collaborative insights. CoDesign, 1(2), 83–102. http://doi.org/10.1080/15719880500135821

Mattelmäki, T. (2006). Design probes. Vaajakoski, Finland: University of Art and Design Helsinki.

Mattelmäki, T., Brandt, E., & Vaajakallio, K. (2011a). On designing open-ended interpretations for collaborative design exploration. CoDesign, 7(2), 79–93. http://doi.org/10.1080/15710882.2011.609891

Mattelmäki, T., Brandt, E., & Vaajakallio, K. (2011b). On designing open-ended interpretations for collaborative design exploration. CoDesign, 7(2), 79–93. http://doi.org/10.1080/15710882.2011.609891

Muller, M. J. (2003). Participatory Design: The Third Space in

HCI. In The Human-Computer Interaction Handbook - Fundamentals, Evolving Technologies and Emerging Applications (pp. 1052–1068). New Jersey: Lawrence Erlbaum Associates, Inc.

OECD. (2001). Measuring Productivity. OECD PUBLICATIONS.

Rittel, H., & Webber, M. M. (1973). Dilemmas in a general theory of planning. Policy Sciences, 4, 155–169.

Sanders, E. B.-N. (2000). Generative Tools for Co-designing. In S. R. Scrivener, L. Ball, & A. Woodcock (Eds.), Collaborative Design (pp. 3–12). Springer London. Retrieved from http://dx.doi.org/10.1007/978-1-4471-0779-8_1

Sanders, E. B.-N., & Stappers, P. J. (2012). Convivial Toolbox - Generative Research for the Front End of Design.

Sanders, E. B.-N., & Stappers, P. J. (2014). Probes, toolkits and prototypes: three approaches to making in codesigning. CoDesign, 10(1), 5–14. http://doi.org/10.1080/15710882.2014.888183

Schön, D. A. (1992). Designing as reflective conversation with the materials of a design situation. Knowledge-Based Systems, 5(1), 3–14. http://doi.org/10.1016/0950-7051(92)90020-G

Sleeswijk Visser, F. (2009). Bringing the everyday life of people into design. TU Delft, Delft University of Technology.

Svanaes, D. (2004). Putting the users center stage: role playing and low-fi prototyping enable end users to design mobile systems. Conference on Human Factors in Computing Systems: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems; 24-29 Apr. 2004, 479.

Vaajakallio, K. (2012). Design games as a tool, a mindset and a structure. Helsinki: Aalto University.

Vaajakallio, K., & Mattelmäki, T. (2014). Design games in codesign: as a tool, a mindset and a structure. CoDesign, 10(1), 63–77. http://doi.org/10.1080/15710882.2014.881886

Ylirisku, S. (2013). Frame it simple! - Towards a Theory of Conceptual Designing. Helsinki: Aalto ARTS Books.

9 APPENDICES

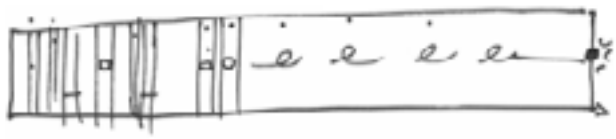
WHAT IS CONCEPTUAL LEARNING? - INTERVIEW OF DR. SALU YLIRISKU

Dr. Salu Ylirisku was my supervisor of the ArtSpace project, and my thesis. This interview was conducted after finalizing the ArtSpace project, before my analysis towards the video records. This interview aimed to clarify the definition of "conceptual learning". It is a key concept behind the FADA method I used for analyzing the workshop videos in this thesis.

I recorded the interview with permission, and transcribed it. Since it's a sophisticated concept, and I was new in the field, by transcribing I gained a solid understanding on this topic. The crucial texts that build up the concept were marked in **bold**.

Author: You mentioned "conceptual learning" should be the start point of my thesis, can you explain to me what is it and why it is important?

Projects aim at **creating an idea** of something to be created. I hope to learn **when and where the idea is born**.



[Illustrates from beginning to the turning point till the end of the project.]

I'm interested in speaking of the **events** happened in terms of learning. Learning in a new sense. It's not like traditional learning, i.e. in classroom you learn mathematics. (Someone discovered it

earlier, and the student 'learn' the knowledge.) In concept design project, you **learn** a lot of stuff, basically the **context** that you'll be creating in. At the same time by learning about the context you become increasingly clear about **what makes sense to be created in this context**. So at the same time you're **creating the 'thing'** to be created. (There are) Different kinds of framings of design, we typically call design directions. In one of the directions, you'll be discovering the concept.

I was trying to see how much it make sense to speak about learning in this phenomena. Why I talk about **"project specific learning"?** It is what people actually learn in the project is the way how to create this 'thing'. It's the principle: what they are creating, why they're creating and how they should be creating it. That's actually a "skill". It enables the creation of this new idea. **The learning is related to** this "thing", the "thing" itself is **the project**. It's the aim. Basically it's a project of creation of a new aim, which is justified and relevant. **It result in the concept** (what, why and how it should be created). That's my idea of the project-specific learning. It's related to the creation of this "thing".

Author: But would you say the learning is the result? Or the results reflects the learning?

The learning is a tricky thing. I see **learning is about the resources**. **It's your increased capability**. It's difficult to point the learning is "that" or "there". It's the configuration of resources that is available. Learning "facilitates" you to attain your goals.

This(learning) is actually the process that's creates you the resources. It enables you to strive forward the creation of these

products.

In your case, this ArtSpace project, there is no single concept. There are the resources that you created, the student personas, the "space puzzles", which could be used as **resources for concept design**. The architects seems to have their own sandwich model.

We can say it **(learning) is about "what"**. It is targeted to the office design as well as the design concept. **It's the same thing that you are designing**. By the kind of resources that you have created is different.

[Pointing to the ArtSpace report] This is not in the form of a concept. It is called **pre-processed material**, not just raw material. It is already somehow **constructed**. With those resources **it's possible to raise a higher level of thinking**. This is already pretty important thing. For example, we can say that the book, the process of enables people to raise from a mundane level to a higher level.

There happens conceptual learning.

You started to **talk about things in new words.** For example, through the discovery of the students' profiles, the profiles are used as shortcut to describe potential user needs, which comes to be used in the argument of spatial design.

Author: I'm little worried: maybe someone who writes about personas have already discussed this persona-creation more in detail.

There are a lot of guys who writes about personas, including Alan Cooper who invented those. And it was not that much based on user studies. It was more of an expression of multiple users in the form of one single person. It was a very goal-driven point of view. It was used to clarify the user goal, in relation to a particular product design. The users were able to be captured in very few among of personas so that it's helpful for the designers to think about the design. I think that **persona is the expression of the learning that happens in the user-centered design process**. And typically the persona get less and less while people get to learn more and more. It gets abstracted. Perhaps through the new process people starts to give new names to things, through which they're able to address more.

One thing happens in scientific concept generation is the **abstraction**, the **generalization** process. It also happens in the user-centered design process. That's one aspect when you climb 'the concept design trees'. When using post-its, you starts to have the themes and you get super themes coming from the cluster of themes. On the bottom layer you have all the discoveries, and you starts to connect the dots. Those start to form hierarchies, which gets increasingly abstract here.

Another aspect is discovering something new. Those dots appeared only once in the initial phase of the project, becomes constantly stated. Sometimes those things become the center of the discussion and always be discussed afterwards.

Author: Do you mean the "thing" is the center of the concept? Or

it's just one part of the concept.

It's one of the **essential resources**, which is important when creating this thing (the concept, product, etc.). Maybe it doesn't eventually become a physical part of the design, but **a driver of the design**. For example you avoid using the left hand because the user doesn't have the left hand. But the design is nevertheless the same, it doesn't require user to use the left hand. For example, that you can never tell this cup is designed for the right-handed user only, because you can also usage was the left hand. But this doesn't exclude the ones who don't have a left hand.

So what makes learning hard is this, it may not be included in the final design, but nevertheless it has been one of the resources. Those resources are available during the interaction where people talk and develop designs. They refer to images, presentations and name things and matters.

The hard part of learning is to gather wide range of info and generate ideas, and being able to choose the relevant ones that contributes to the goal.

What I call **conceptual learning is the awareness of related things**. The whole problem with this learning aspect is that ultimately you cannot prove anything. It is not science. What you can do is giving the most plausible explanation, the most believable justification for this interpretation. If people believes you saying that makes sense, it is good enough.

And it is one of the difficulties of this kind of empirical, phenomenon logical research. The truth is always beyond what we can

study. Because we are making **interpretations on the basis of communication**. We're not studying a physical phenomena. Of course those are big issues.

In my research I could clearly stated that there emerged the concept. In your case you could say that the book (the puzzles, the user portraits) is created in that event. I think it occurs in our discussion before final workshop. I drew on the board and it served as a template of the concept. I think constantly that you have to go back to the basic question: **what do we learn from what we have done here about facilitation.**

Eventually I hope you go beyond simple level of saying that "this works, this doesn't work", but saying that "this is how it happened", "it doesn't work because it will happen like this" or "because it has this kind of consequences". So you need to **study the consequences of the facilitatory acts**. One thing to be look into is what are the facilitatory acts that has been made? And also staging the settings of the materials. Those are **the questions that the facilitator asks**. Could you find... Will you do this... The next task is...

We can split the facilitatory acts into intended and unintended. Because they are not necessarily came from the facilitator but from the participants.

The script is a **facilitatory resource**. When you decide to use these terms(facilitatory acts and facilitatory resources) in your thesis I'd like you to refer to our co-design journal. **What is facilitatory act? It is basically a frame-setting activity. It enables people to start working towards a new goal.** For example I start to ask you a question and you answer to the question. I'm able to trigger a new

goal that you start to think about it. So I was able to facilitate your activity. I was able to set the frame. Which means essentially to make you **work in a goal-aligned manner.**

Author : So it's like in our last workshop we ask the participants to create the space based on a user's needs, and then asked them to another user's needs to the space?

That's facilitation. Facilitatory acts is you introduce the goal, the material and the workspace, and then the participants, hopefully has a consequence of the facilitation, they start to work accordingly. They may happen but they did not do that in the teachers' workshop. They did not start to use the image on the wall, despite the fact that they were instructed. It's interesting to look into why not. Is there something in the facilitatory acts, or something else that's caused the dilemmas. Because you can argue that others are successful and productive, do they lead into this productive facilitation? The concept of productive facilitation, you can actually bind it to the idea of conceptual learning. Productivity facilitation creates new resources for thinking. And the resourcefulness of thinking is the result of learning.

Author: : It is important to define this productive facilitation. What is considered to be productive?

If you think in terms of the workshop, in this teachers' workshop, you asked them to do something. But instead they just continued chatting about things. It basically resulted into very little of stuff that is written on paper. Most of the stuff is lost. **You cannot call it's productive if there is very little left in the product that you carried on.** But if you compare it to the last workshop. We photo-

graphed the post notes, built with spaces based on relations and names. All that is still carried forward. It is more productive because there are products, concrete things, communicative resources, which are delivered further and further in the process. So it is productive facilitation.

It was able to **enable the participants to work in a goal-aligned manner**. In addition to that you were able to **document the results in a way that it can be carried forward in the process.** 33:55 The point of looking into the facilitation is to learn about the facilitatory acts where it happens.

And another important aspect is to have the right set of people around. An example of that is Tapio Koskinen, he used all the possible channels to reach everybody but only got two participants showed up for the second workshop. And it was a failure. How come in our workshop we only invited a handful of people, yet everybody came? **Invitation is one important aspects of productive facilitation - have the right mind around the table - to think in a relevant manner of the topic as well as have the power to influence.**

Author: : It's just before today that I focused much more on facilitation than learning. And it's kind of a new perspective for me.

The learning is the product. If you talk about productive facilitation, **the learning is what you plan to achieve through the facilitation**. The difficulty is that the learning cannot be seen directly. It's visible in the resources that the people use in their constructive thing to be designed. Some of these resources lies in their head, which only become visible when they articulate.

Author: For me learning is more like a chain of actions rather than something of a resource.

For example if you want to learn to ride a bike, it is useless unless you have the resource, which is the bike. 38:28 Quite often the memories of things are not so reliable to be recalled in the hit place. You can perform at some level just with your body. But quite soon you will need some exterior resources.

40:26 In those design projects you always have something in the **materials that travels throughout all the events**. If there is no such materials people will be lost of what's they have been done before. Typically someone will have to control over these materials, and make agendas. In co-design workshops, the script serves as agenda. It helps the facilitator to perform.

I agree completely with you that learning is in the performance. In order to prove that you need to show where the performance is. I did this in my own visitation, by looking into people's performance (talks, gestures, etc.), I was able to tell what are the new concepts and how they emerged. I was also able to tell about the framing, the new goals that they have generated. There are also strategies that they have made for the creation (the design concept). This is highly problematic because the **design concept itself is a resource that exhibits the aspects of learning.** If you think someone is going to continue your project after you have presented the design concept. You would assume or anticipate that the thoughts you have been constructed would be carried on forward. So they are creating the thing that you have imagined. They will understand why it exists. They are going to be directed based on the design drivers and prin-

ciples that you have articulated.

Through the process you are able to frame and articulate a novel concept. The concept is based on the context and resources, it expresses the learning. If someone articulates the concept in the form of a product, then that person is performing your learning. That person is facilitated by the idea that you have communicated.

Author: I have some thoughts on the topic of carrying the resources from the previous learning to the next project. I think that's no matter how willingly the next person try, they could never get the whole idea of what I have been thinking.

Hopefully they will get the main points. I am trying to express this in an easier way. 47:40 Quite often, rather than talk about action, I'd like to talk about performance. Performance captures your body expressions, it also captures the aspect that you being able to do things. **Learning is about the resourcefulness that become articulated in the performance.** So basically what you are doing in the **productive facilitation is trying to enhance that resourcefulness.**

Sometimes it is difficult to talk about the resourcefulness. Because with the same resources you can do differently. For example, two persons, each one has a knife. One is performing very well yet another one performs very poor. It is about having the right resources and the right amount of resources. The relevance and quantity.

Author: what do you mean by 'quantity' here? If we gave a chef and an ordinary person each one a knife, what is the 'quantity'? Is it

the expertise?

It is very materialistic point of view. For example you have one pile of post-it, if you have 20 people in the workshop, then you don't have enough resource. It may not be working in this context at all, the notion of quantity. Resourcefulness can be understood in many ways. It can be communicative skills. First of all you should understand the language of course, then you need to understand the concept that you're talking about. On top of that it is important to know what you are doing. But it is not always evident what you are doing. Sometimes in a meeting people will ask, "what we are doing"? Because people start to work at different ends and forgot about the concept they are creating. And the 'how, is about being strategic. You should be following the principles that create exactly that. For example, Turkka mentioned one of their creations in Nokia, a mobile phone whose design driver is "one hand use". So no features should be added to the design that is conflict to this driver. In all the frame-setting he need to pay attention to the principles. If a designer adds a feature that requires two hands operation, he is not following the concept. He is not exhibiting the project-level specifics learning. The concept is at the strategic level defining the principles on how things (the product) should be created. It can be only attained when people are following these principles. Learning is expressed through the decisions that they make. That's why I call it project specific, because it's specific to that particular principle of the project. And it is expressed in the design concept.

1:00:00. **Learning is about the alignment of the resourcefulness that becomes articulated during the process.** I talked about

the goal alignment when studying the videotapes of the frames. Their performance/ interactions aligned with their goal. Coherent. Designers articulate the concept that aligned with the principles.

So it's not only about the resourcefulness that the person is aware of, but also that he has to perform in a way that aligns with the principles related to the goal. In product design, the goal is often expressed in some form of design result.

What you try to do in the workshop is improving the resourcefulness. To be able to do such facilitatory acts, which enabled people to be productive, meaning that they become more resourceful in their design.

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Aalto University